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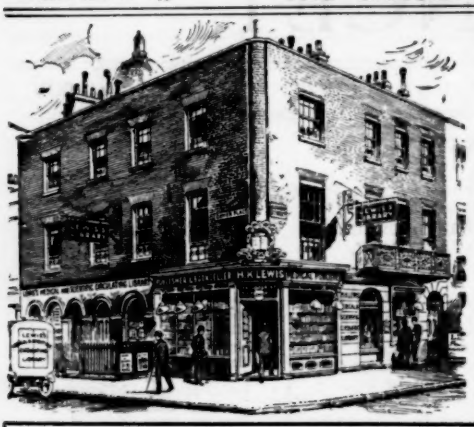

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LECTURE II.*—EXOPHTHALMIC GOITRE.

THE problem of Graves's disease or exophthalmic goitre is even more difficult of solution than the problems of colloid goitre or of simple adenoma. There are so many gaps in our knowledge of this mysterious disease that agreement is far from being reached as to its nature and cause. As McCarrison[21] has pointed out, there has been little or no study of its epidemiological nature, and although much is known of the distribution of endemic goitre there is at present no such knowledge of a similar distribution of Graves's disease. In England there are two distinct types—those which supervene on colloid goitre, and those which start in previously normal people. The former is the less common, and in endemic areas such as Berne and the Gilgit and Chitral Valleys, Aarau and McCarrison[21] have shown that this variety is distinctly rare. In it the ætiological factors of hereditary and general infection will be similar to those of colloid goitre, but in the primary variety they appear to have a less definite bearing.

PATHOLOGY.

Moebius[15] first put forward convincing evidence to show that the disease was dependent upon excessive secretion of the thyroid. Since that time evidence has been accumulating that the symptoms are always associated with a change in the gland. From time to time cases are described in which there is no visible enlargement of the thyroid, but, as Kocher[16] and Berry[4] have shown, no one has ever demonstrated that a case of Graves's disease can occur with a normal thyroid. The size of the thyroid will vary considerably according to whether there has been a previous colloid enlargement or not. To the naked eye three distinct varieties may be recognised, and it is well to distinguish these since they are associated with a somewhat different symptom-complex. For convenience one may describe these three varieties as the colloid type, the vascular type, and the nervous type. The first variety has very similar characteristics to that of a colloid goitre. There is a much enlarged smooth mass which is semi-transparent from the presence of colloid, but on section there has been a considerable proliferation of the epithelium, and hence the colloid spaces are not nearly so distinct even to the naked eye. Remains of the distended vesicles are, however, seen scattered throughout the cut surface, and in some cases the cellular change may not be sufficiently pronounced to be noticeable to the naked eye, the gland then appearing to be a simple colloid goitre. The vascular type, which is found more commonly in relatively young women, shows also a smooth uniform enlargement of the whole gland, but to a less degree than that which supervenes on a colloid goitre. The cut surface shows a uniform granular or fleshy appearance, so that manifestly it is richly cellular. Little or no trace of colloid can be seen. The third or nervous type is a rather smaller thyroid which is found more commonly in people of a later age, generally at or about the menopause. Not only is the gland relatively smaller, but it is rather more irregular and nodular. The cut surface has a much more lobulated appearance, so that portions of the gland stand up and give somewhat the appearance of multiple small adenomata. They have, however, no definite capsule, although the fibrous stroma is more in evidence and bands of fibrous tissue pass between the adenomatous masses. As with the vascular thyroid, each of these areas is finely granular and shows little or no colloid. All three varieties are extremely vascular. At operation they are found to have enormously dilated veins and very large arteries, and the cut surface bleeds with extreme freedom. The microscopic section shows a very characteristic appearance. A well-established case will show a very great cellular hyperplasia. So great will have been the proliferation of the cells lining the acini that in the greater part the gland will appear to be a solid cellular mass. Here and there, however, small acini can be seen. Even in these there is some proliferation of the epithelium with infolding of the walls of the acini. In these spaces there is a small amount of poorly-stained colloid. If the change has supervened upon a colloid goitre there will still be the large spaces containing colloid material, but there will be very considerable proliferation of the interacinar epithelial cells and some proliferation in the acinar walls with consequent infolding. The characteristic microscopic picture, therefore, is a great increase of the epithelial elements and the presence of only a small amount of poorly-stained colloid. Occasionally an exophthalmic goitre may be associated with an adenoma, a condition which must be sharply distinguished from the mild amount of hyperthyroidism which is found with a fœtal adenoma. That portion of the thyroid, apart from the adenoma, will always show much cellular proliferation, whereas the adenoma may be of the colloid type. In the fœtal adenoma the proliferation is limited to the encapsuled growth.

ÆTIOLOGY.

Like other diseases of the thyroid, this condition is much more common in females than in males. In my own series[31] there were 129 females and only 10 males—that is, a proportion of 13 to 1. Sir Hector Mackenzie[23] found in his series that the proportion was 10 to 1, and this is the figure usually accepted. Murray,[26] however, made the interesting observation that in his recent figures the proportion of males is increasing, for whereas in 120 cases up to 1903 the proportion was 10 to 1, in 300 cases between 1911–21 there were only three females to one male. He raises the interesting suggestion that as the modern male is becoming more highly-strung and nervous in character, so he may be becoming more prone to exophthalmic goitre. My own figures, however, have not shown any such increased tendency in the male, but my patients, being mainly drawn from the hospital out-patient department, may not have shown the degenerative effects of civilisation to so marked a degree. Heredity seems to be a much less important factor in this variety than in the others. In Sir Hector Mackenzie's series[23] there was some family history in 10 per cent. of the cases. This is considerably less than that of the colloid goitres, where even in this country some 25 per cent. of the cases have one or more members of their families affected.

The age-distribution is somewhat similar to that of a colloid goitre, and like the sporadic cases of that disease it is rare to find the condition in young children. Sir Hector Mackenzie[23] in his series found there was one patient of 10 years of age, the others were all over 14. Attention has already been drawn to the fact that two distinct varieties of the disease may be recognised, and this is also seen in the age incidence. The vascular type is much more common in young people, and in my own series accounted for about half of the cases, their age of onset being between 15 and 25. The other or nervous group is commoner at a later age and is generally seen commencing between 35 and 45. It is of interest to note in Sir Hector Mackenzie's series[23] that in his hospital cases half of the patients were under 25, whereas in his private cases less than one quarter began before this age. It would seem, therefore, that the more well-to-do portion of the population are more prone to suffer from the nervous type. This may be due to the fact

* Lecture I. appeared in THE LANCET of July 14th, p. 53.

that such people are more subject to mental disturbance, which has long been noted to be a potent factor in the development of the disease. Very frequently one obtains a history that some severe mental stress, such as a shock or fright, or even prolonged mental worry, immediately preceded the onset of symptoms. During the late war a large number of cases of hyperthyroidism were seen in soldiers who had been exposed for a long period in the trenches, and in this country I have in my own series met with several cases who dated their disease back to a fright received during an air-raid. Sir Hector Mackenzie[23] found that in his series some serious mental disturbance was present in one-third of all the cases.

The relationship of an acute or chronic infection to this disease is not nearly so clearly established as in the case of colloid goitre. The researches and experimental work of Farrant[13] have, it is true, shown that after exposure to an acute infection or to an acute toxæmia changes occur in the thyroid gland which are identical with those seen with exophthalmic goitre. There is, however, as a rule, no clinical evidence of hyperthyroidism, and none of manifestations which are found associated with this disease. The relationships of intestinal infection cannot yet be regarded as proved, although McCarrison[21] believes that it is a very important factor. It is true that in many cases the symptoms date back to some acute infection such as influenza or rheumatic fever, but such a disease might act in much the same way as any mental disturbance rather than from the effects of the infection. Cases have been reported where the patient has been cured by methods directed to the improvement of intestinal stasis or the removal of some other source of infection such as may be found in the tonsils or teeth. Such cases are very few in number and it cannot yet be said that infection has been proved as a cause of the disease. McCarrison[21] has also laid stress upon the importance of malnutrition as a causative factor, but that such a condition is not an essential cause of the disease is shown by the fact that many cases occur in well-fed and otherwise healthy people, and there is no evidence at our disposal to show that the disease is more common among the poor.

CAUSE OF SYMPTOMS.

Much discussion has from time to time centred around the cause of the very diverse symptoms which occur with exophthalmic goitre. The older views that the disease was due to some lesion of the restiform bodies, which was based on the experiments of Filehne,[14] or of the sympathetic system, have little if any evidence to support them, and are now disregarded. The three views which are supported to-day are that the symptoms are due (1) to hyperthyroidism, (2) to dysthyroidism, (3) to pluriglandular disturbance. It will be manifest that whichever of these three theories is accepted, it will still leave unsolved the reason as to why there is a disturbance of the thyroid or of the other glands of the endocrine system. This change may still be caused by infection, by mental stress, or some other factor at present unknown. The belief that the symptoms are due to a pluriglandular upset has at first sight a considerable amount of evidence to support it. It is realised that in many cases of exophthalmic goitre and also of hypothyroidism there are changes in the pituitary gland and often evidence of interference with the activity of suprarenal glands. Moreover, the close relationship between the changes in this gland and periods of ovarian activity in the female will support this view. Strong evidence has also been brought forward to show that the thymus is as much or even more responsible for the symptoms as is the thyroid. Crotti and Bowen[9] as well as Capelle and Bayer[8] have strongly supported this view. All those who have had an opportunity of seeing post-mortem examinations upon examples of this disease will support Berry's statement[4] that in no such examination can one fail to notice an enlargement of the thymus. Bircher[5] states that he has been able to produce symptoms of the disease by grafting human thymus tissue into the peritoneal cavities of dogs. Garre[16] even advises operation upon the thymus gland as a cure for exophthalmic goitre. Such views have not, however, received general acceptance, and it is quite possible that the changes in the other glands of the endocrine system are secondary to those of the thyroid gland. The experimental and clinical evidence that the symptoms are due to a hyperthyroidism is so great that this view is generally accepted to-day, and it is upon its acceptance that the value of surgical treatment is based. The evidence may be summarised as follows: It has already been shown that Moebius,[25] Kocher,[18] and Berry[4] have demonstrated that there are always pathological changes to be found in the thyroid in Graves's disease, even when the gland is not clinically enlarged. A large number of experiments have been carried out upon animals. Edmunds[12] and Baruchi[3] were able to produce typical Graves's disease in a large series of monkeys, dogs, rats, and rabbits by administrating large doses of thyroid obtained from ordinary human goitre. These results have since been confirmed by French.[15] Considerable discussion has, however, arisen in the case of other experiments because it is difficult to determine accurately how far symptoms produced in animals are really analogous with Graves's disease in men. Klose, for instance, found that extracts of thyroid from cases of Graves's disease gave rise to different symptoms than extracts of normal thyroid when injected into animals, and Carlson[7] claimed that the symptoms which were produced were not those of exophthalmic goitre. Hence these observers and many clinicians to-day believe that the symptoms of exophthalmic goitre are due not so much to a hyperthyroidism as to a dysthyroidism. The more recent experience of de Quervain[10] would seem to show, however, that rats fed with the thyroid of exophthalmic goitre show the same hypersensitiveness to a deficiency of oxygen as when fed with the thyroid of an ordinary goitre, only to a much more marked degree. In addition to the experimental evidence there is a considerable amount of clinical observation which supports this view, and cases have been reported in which large doses of thyroid extract have been taken and have given rise to a typical picture of Graves's disease. Von Notthaft's well-known case[20] was one in which a man took excessive doses of thyroid extract as a cure for obesity and developed typical symptoms. Sir James Barr[2] reports others where symptoms followed excessive doses of tincture of iodine, and many cases, including those reported by Ball,[1] Kocher,[18] and Pineles,[26] have been recorded of hyperthyroidism following the use of thyroid extract in the treatment of simple enlargement of the thyroid. The pathological work of Wilson[27] and MacCarty,[22] who showed that the amount of cellular proliferation was in direct proportion to the extent of the hyperthyroidism, would support this same view. In the previous lecture stress has been laid upon the fact that adenomata of the fœtal type may give rise to symptoms of hyperthyroidism, and Dunhill[11] and Berry[4] described cases where similar symptoms have occurred in association with parenchymatous goitre. Any surgeon who has operated on a large number of thyroids will have met with cases where a typical exophthalmic goitre has become grafted upon a colloid goitre, and will have found that in these cases there is in addition to the colloid change a definite proliferation of the thyroid epithelium. Symptoms of a similar nature may occur with a carcinoma of the gland. A well-known example of this is the case reported by Clunet.[6] The good results which so often follow the operative removal of a portion of the enlarged gland lend very strong support to this view. It is true that many investigators, among whom may be mentioned Huber, have laid very special stress upon the fact that certain cases fail to be cured by operative treatment. That this is so will be endorsed by all surgeons of experience,

but it must be remembered that the amount of gland which is removed at operation is very empirical, and it is often necessary to remove an amount which is insufficient to cause a cure simply because a larger operation would be fraught with considerable danger. In all large series such as those reported by Dunhill,[11] Kocher,[10] and Halsted,[17] and I may say also in my own series,[21] there have been examples in which the first operation has caused only an amelioration. Further operation has been necessary, but with the more extensive resection a complete cure has been obtained. It may be said, therefore, that the balance of evidence to-day strongly supports the view that the symptoms of exophthalmic goitre are due to a hyperthyroidism. It must be realised, however, that this is not a full explanation of the disease, for although there is a certain amount of evidence that this hyperthyroidism is itself dependent upon infection, our knowledge of the cause of the hyperactivity of the thyroid is at present incomplete, and although to-day operative removal may be the most satisfactory treatment, one is led to hope that in the future the cause of the excessive activity of the thyroid will be discovered and will be corrected so that operation will no longer be necessary.

SYMPTOMS.

The symptoms of this disease are manifold. The thyroid itself is generally enlarged, but the extent of the enlargement will vary very considerably. It is most in evidence in those cases which are secondary to a colloid goitre, and here, indeed, it may be the symptom of which patients chiefly complain. In the vascular type the thyroid is also considerably more enlarged than the nervous variety. Thus it is that as a general rule the younger the patient the larger the thyroid, and indeed in some of the more elderly cases the gland may be so slightly enlarged that it is not palpable. These cases are often described as Graves's disease with no goitre. The enlargement is as a rule uniform, although one lobe may be slightly bigger than the other. In a well-established case, especially in the vascular type, the anterior and external jugular veins are prominent and pulsate freely. The rapid beat of the carotid vessels is very manifest, and in some cases an actual expansile pulsation may be seen in the gland itself. Palpation of the upper poles will nearly always reveal a definite thrill, and in this position a murmur may be heard with a stethoscope.

There are usually very distinct ocular symptoms. The eyes are more prominent, the exophthalmos being seen quite early in the disease. There has been much discussion as to what is the actual cause of the prominence of the eyes, but the evidence to-day, as Murray[20] has shown, would seem to point to its being largely due to an increase of intra-orbital fat. Whatever is its origin, it is one of the last symptoms to disappear when the patient is cured. Associated with the exophthalmos are certain physical signs. Stellwag's sign is the presence of a visible ring of sclerotic around the cornea. Von Graefe's sign is the inability of the upper lid to follow the eye when it is directed downwards, so that if the patient looks down towards her feet there is a wider ring of visible sclerotic above the cornea. Moebius's sign is the inability of the eyes to converge in accommodating for near objects, and Joffroy's sign is the failure of the forehead to wrinkle when the patient looks up. Less commonly there may be weakness of the ocular muscles, so that there is slight dropping of both upper eyelids, and occasionally even paralysis of one or other external rectus, giving rise to double vision. It is important to remember that when the proptosis is extreme the patient may be unable to close the eyes, and under these circumstances the cornea may ulcerate, so that in many advanced cases there has been an extreme ulceration going on to sloughing of the cornea, with perforation and even complete destruction of the eye.

The circulatory symptoms are always a feature of the disease. The patient quite early in its progress will complain of palpitation and dyspnœa, which is always greatly increased on exertion or excitement. It will be found that the pulse is raised to 110 or 120 per minute even in mild cases. In the more severe periods of the disease it is often raised to 160 or sometimes, indeed, may be uncountable. Even at this period it will be noticed that the heart's apex beat is displaced outwards and is very forcible, so that it is diffused over a large area of the thorax. At first the sounds are clear in spite of the heart's rapidity, or there may be characteristic hæmic murmurs. Later on the cardiac muscle suffers, so that the pulse becomes irregular and there is evidence of auricular fibrillation. In several of my more advanced cases Dr. J. Parkinson found an advanced stage of this condition, a change which will only improve to a slight degree even when the hyperthyroidism is brought to an end.

The skin and its appendages also show very definite changes. These patients are prone to flush on the slightest exertion or excitement, and when first seen often show a characteristic appearance owing to the irregular and blotchy erythema of the face and neck. The sweat-glands are nearly always over-active, the constant moisture of the skin causing the patients considerable annoyance. They stand the heat badly and nearly always much prefer the winter months of the year. It is important to recognise the evil effects of heat, not only in causing an exacerbation of the disease, but because of the increased risks of operating during the hotter periods of the year.[21] Later on in the disease there are nearly always pigmentary changes, small irregular patches of dark-brown pigmentation appearing on the arms, chest, and abdomen. They are more marked in that frequently the patient shows a certain amount of general anæmia. The appendages of the skin are also affected. Nearly always these patients will complain of their hair falling out, and I have observed several cases in which there have been patches of alopecia appearing both before and after operation. In some cases this condition has progressed until very nearly complete alopecia has resulted. Dr. J. H. Sequeira has called special attention to this condition.

The above group of symptoms are most marked in that variety of the disease which I have described as the vascular type. These patients are usually relatively young. The condition has frequently started shortly after puberty. They show considerable enlargement of the thyroid gland, advanced exophthalmos, a rapid pulse, and very increased sweating. The other symptoms about to be described are also present, but, with the exception of amenorrhœa, are less in evidence.

Nervous symptoms are always present to some degree, and may indeed be the first indication of the onset of the disease. Some of these patients have first noted that they were startled and excited when spoken to, and at times indeed the first changes noticed may have been that they showed a tendency to drop articles when carrying out their household duties. They are always manifestly upset by the medical examination, and often have a difficulty in giving an account of their symptoms. This nervousness has been specially noticed in those cases of slight hyperthyroidism found in soldiers after long exposure to trench warfare, who later developed other evidence of hyperthyroidism. There are also well-marked physical changes on the nervous side. The patients show a fine rapid tremor in the extended hands. It affects, however, the whole limb and is present in the extended tongue. Sometimes it may be sufficiently marked to interfere with the patient's work. The threading of a needle and even drinking fluid from a full cup may be impossible. The tremor, like the other symptoms, is always increased when the patient is worried or excited. As further evidence of change in the nervous symptoms it may be noted that these patients often have bad dreams at night which are sometimes indeed sufficient to interfere considerably

with their sleep. In the nervous type of the disease this group of symptoms is always the most in evidence. These patients may show such nervous irregular movements that they can barely sit still, and the condition comes to resemble closely the movements of chorea, although the more advanced age of the patient—she is usually between 35 and 40—will aid in the diagnosis. Mental changes are also more marked. In the minor degrees the patient is simply abnormally irritable, excitable, and emotional. These changes may be sufficient to interfere with her work, and she finds that they are more marked after a heavy day's work. It is often, indeed, on account of these symptoms that she has to abandon her business. Occasionally the condition may spread even further, and hallucinations may supervene. She then becomes melancholic or even maniacal, and attempts at suicide are not uncommon. In such conditions the patient will often complain of severe headache.

Gastro-intestinal changes are, as a rule, an indication of an exacerbation of the disease. There are periods often at the onset or perhaps arising irregularly at no definite time, and being dependent upon no known cause, when the patient will have severe attacks of vomiting and diarrhœa. At such a time the other symptoms will usually increase. As the exacerbation dies down the vomiting and diarrhœa will cease, and the patient will then develop a good appetite, which, however, at times may be capricious. It is in such periods that she loses considerable weight, and, in a severe case of the disease, wasting, passing on even to profound emaciation, is a constant factor. It has been noted that in some of these periods when the patient has shown diarrhœa and vomiting that there is glycosuria. The relationship of Graves's disease to diabetes has indeed often been noted, and it would seem that even when the hyperthyroidism has been relieved by operative treatment the patient is still prone to develop diabetes. In my series of 139 cases there were two who developed diabetes at periods of one and five years after operation. The relationship of these two diseases has been investigated by Williamson,[36] and he has shown that diabetes may follow the Graves's disease or rarely precede it, or that both diseases may develop together after some mental shock. He has also shown that not only is there often a mild temporary glycosuria in Graves's disease, but, as a rule, the sugar-tolerance is diminished. Occasionally there is a very definite family history of diabetes in patients suffering from Graves's disease.

Changes in menstruation are very common. A large proportion of my younger patients with the vascular type of the disease have had complete amenorrhœa, but this symptom is not constant, for in some of the more advanced conditions the periods have been quite regular and normal. It is usually stated that exophthalmic goitre has no effect either in preventing or altering the course of a pregnancy. This has not, however, been my experience. Some of my cases who have been married for several years and have been childless have become pregnant shortly after an operation. Moreover, it has been my general experience that if a pregnancy has occurred in unoperated cases the symptoms have always been considerably exaggerated, and I have therefore come to regard pregnancy as having a very deleterious effect upon the course of the disease. In those cases who have shown amenorrhœa the return of menstruation is often one of the earliest symptoms of improvement after an operation.

Changes in the blood have frequently been described as characteristic of the disease. As a general rule there is a slight amount of secondary anæmia. Kocher[18] has laid very great stress upon the presence of changes in the differential count of the white corpuscles, and states that there is nearly always an increase in the lymphocytes. Dr. Panton has, however, examined a large number of my cases and has not been able to determine that a change of this sort is in any way characteristic.

TREATMENT.

It is customary to-day to compare the results of medical and surgical treatment and to sum up in favour of one or the other. It must be remembered, however, that at no time has there been a closer coöperation between medicine and surgery, and in no disease is such coöperation so essential as in exophthalmic goitre. My aim, therefore, will be to indicate to you how the two methods should be combined and which variety of case should be treated with or without surgical measures. It is still perhaps necessary to point out that medical treatment alone cannot be considered satisfactory for the treatment of all cases. I think this is now becoming unanimously recognised. Sir Hector Mackenzie some 10 or 12 years ago pointed out that with medical treatment the mortality was somewhere in the region of 25 per cent., and that even in those cases which did not die medical treatment had to be carried out over a course of very many years. At that time, however, he did not advocate surgical intervention, as he regarded the mortality of operative treatment as much too high. In his more recent communication[24] his views have entirely changed, and he is now one of the strongest supporters of operative treatment. The evil results that may accrue in long-neglected cases I have already mentioned, and you are probably all familiar with examples of such. Grave myocardial changes, severe mental disturbances or injury, and destruction of the eye may all result, and once having arisen will usually be beyond recovery even if the hyperthyroidism is overcome. Since the view is usually accepted that the disease is due to hyperthyroidism the rational form of treatment would seem to be the removal of the excess of hypertrophied gland, but, as I have already pointed out to you, such a form of treatment must be regarded in itself as unsound. It is only a temporary measure which will be abandoned when the cause of the hyperthyroidism is known and can be overcome. The only serious objection to such a form of treatment to-day is that of the mortality of the operation. Only a few years ago this was extremely high, and there is no doubt that even to-day such an operation is one which has to be undertaken with the greatest care. It is always associated with considerable anxiety, for the causes of a temporary exacerbation of the hyperthyroidism are but little understood. More recent series of statistics show, however, that extremely satisfactory results can be obtained. In the discussion[34] at the Royal Society of Medicine in 1921 it was agreed that the present mortality averages some 5 per cent. In individual series which have been published the mortality has been reduced considerably below this. Romanis[29] published a consecutive series of 250 cases with only a 2·4 per cent. mortality. Pemberton[27] has published the latest group of cases from the Mayo Institute comprising in all 1093 cases. In this group the mortality was 1 per cent. One may say, therefore, that in this condition the danger is no greater than that associated with any other major operation. The difficulties arise in more advanced cases where severe secondary changes have taken place, and in hospital statistics a large number of such cases will have to be included, for although the risk may be well recognised, operation may be the only possibility of holding out any hope of amelioration or cure. It is the inclusion of a large number of such advanced cases which has kept the mortality of my own series at about 5 per cent., and I believe that if it fell much below this figure it would be an indication that I was refusing to offer help to many of those patients which stood most in need of it. It must be agreed, therefore, that surgery is not free from risk, but that it has a very definite place in the treatment of this condition, and we have to consider carefully what are the indications for its use. The points I would lay stress upon in operative treatment are:—

(*a*) *Selection of Time of Operation.*—It is my custom never to operate in the first six months of the disease.

I believe that in this period medical treatment holds out the greatest hope of success. In the early stages the symptoms are sometimes very acute and rapid in their progress. Not only will an operation in such a case be fraught with considerable risk, but the patient will generally react well to medical treatment. The details of such medical treatment it is not my place to discuss with you, but there is one method which must be mentioned as much attention has been directed to it of late. This method is that of X ray treatment. My own experience of its use has been very unsatisfactory. I have knowledge of three groups of cases in which it has been applied. There are firstly those who have come to me seeking further advice but have already had such a form of treatment. Manifestly these are selected cases of failure and therefore it would be unfair to judge the results of X ray treatment upon them alone. In my series of 139 cases there have been 14 such. They have all had prolonged courses of X rays and have gained little or no benefit. A large number of them indeed, as you will see from the photographs,* have been very seriously scarred and burnt from the application of the rays. Two stated definitely that their symptoms were much increased after treatment, one of them developed a squamous carcinoma of the skin which, although removed at the same time as the operation upon the thyroid, later recurred and led to the death of the patient. A second group are those who in the earlier series had been treated only with a hemithyroidectomy and who had had some recurrence of symptoms with enlargement of the remaining portion of the gland. Such conditions would seem to specially lend themselves to treatment by X rays, but of five which have been so treated there has been no relief in any example. Of the value of this form of treatment in the very early stages where an operation is not indicated my experience is naturally small, but I believe that, if combined with other methods, it may be of some value. I have no evidence that X rays can overcome hyperthyroidism even to the point of myxœdema, as is sometimes claimed; but, on the other hand, I have never found that it makes a future operation more difficult on account of the fibrosis. If I had evidence that it produced any fibrosis I should believe that it could control the hyperthyroidism. I have never seen it produce any change in the thyroid, but it may cause dangerous and unsightly changes in the skin. If at the end of six months the benefit has been very slight, or if the symptoms return as soon as the patient ceases medical treatment, then surgical intervention should be considered. Even if operation has been decided upon, an enormous improvement in the immediate results will be gained by a careful selection of the time of operation. It is well realised that all cases of exophthalmic goitre show periods of considerable exacerbation. Sometimes these are most marked in the first six months of the disease, but even later there is always a periodic variation. Mayo has stated that there has been nearly always a second relapse at the end of the first year which would usually last about six months, and that such a time was bad for operation. I have not found in my series that this change is at all constant but that every case is liable to bad attacks lasting for short periods which depend upon no known cause. The only safe method of treatment, therefore, is to carefully watch each case and to operate when the symptoms are minimal. It is well known that any sudden change of scene or excitement will lead to an exacerbation, and therefore no case must ever be operated upon immediately after the patient is admitted to hospital or nursing home. They should be carefully watched until it is realised from a study of the pulse and temperature, and often of the basal metabolic rate, that the patient is in the best possible condition for the operation to be undertaken. It is during this period that medical treatment is of so much value. In a large number of my more recent cases I have had the great benefit of Dr. C. H. Miller's help. He admits such cases and gives them a course of carefully thought-out medical treatment. If progress is marked operation is delayed, but if, as so often happens, the patient improves considerably and the condition then remains constant, the best time is selected and an operation is performed.

In the late stages of the disease, where there are secondary changes in heart and kidneys, an operation could only be performed with considerable risk, and the mortality is certainly high, but on the other hand, unless an operation be performed, progress will be steadily downhill and the disease itself is likely to be fatal. The increased dangers, therefore, are no counter-indication to operation, but the risk must be carefully explained to the patient's relatives. Although such patients are unlikely to be completely cured, they will often be so enormously improved that they will be converted from bedridden wrecks to those who are able to lead a useful happy life. In spite of all the above precautions there is still an element of uncertainty about this disease, and both Dunhill [11] and Berry [4] have had an experience which is similar to my own—namely, that every operation is carried out with a certain amount of anxiety, for even in those cases which appear to be most suitable an unlooked for result may occasionally occur. This indicates that there is still some factor of which our knowledge is at present imperfect. I [31] have recently laid stress upon the fact that during the very hot weather the symptoms are all exaggerated and the patient stands operation very badly, and that therefore during a heat wave the operation should be postponed.

(*b*) *Selection of the Type of Disease.*—I have already drawn attention to the different types of disease which may be met with, and the importance of recognising them lies chiefly in the fact that the mortality of operation differs considerably in each type. The colloid and nervous types are those who are likely to show the lowest operative mortality, but even with them the precautions mentioned above must be carefully observed. The nervous type of patient stands an operation badly, so that a rather more prolonged preliminary treatment may be necessary. Should there have been a history of mania or of attempts at suicide the outlook is even more serious, and for this reason many physicians and surgeons advise that the presence of such symptoms should be regarded as definite counter-indications to operation. It should certainly never be considered until medical treatment has been tried, but I have one case in my series who on three occasions had attempted suicide but after operation enormously improved and is now living a normal and happy life. An operation under such conditions must only be undertaken after the risks have been carefully considered and explained to the relatives.

(*c*) *Preparation for Operation.*—The importance of a thorough course of preliminary medical treatment has already been mentioned. It should under no circumstances be omitted. The administration of large saline injections as a means of lessening the toxæmia is of considerable value and may be very useful as a preparation for the anæsthetic. In the choice of anæsthetic there has been much discussion. Many surgeons lay great stress upon the importance of a local anæsthetic. It has been my custom, however, to use a minimum amount of ether, as I believe that if this anæsthetic is carefully given it is practically free from risk and it overcomes the drawback of the psychical disturbance which is often so evident in these patients when they are conscious. My own method is to administer for several days before the operation a rectal saline. On the day of operation the rectal saline is changed for a mixture of olive oil and ether, 3 oz. of each being used. This is administered about three-quarters of an hour before the operation and is usually sufficient to cause

* Many photographs of cases before and after operation were shown at the lecture.

unconsciousness, so that the patient can be carried to the theatre without her knowledge. The actual anæsthetic is continued with ether on an open mask, but as a rule only about 1–1½ oz. is required. Chloroform in any form must never be used; it appears to act as a deadly poison.

(*d*) *Choice of Operation.*—Many forms of operative technique have been carried out. In some advanced cases a preliminary ligature of the vessels of one or other pole—and my own belief is that ligature of the upper pole is a much simpler and less serious operation—is of value in reducing the toxæmia. If, however, a careful course of medical treatment has been carried out this preliminary operation will be required very seldom. There is no doubt that at the operation itself the two chief dangers are dependent upon pressure upon the gland and upon hæmorrhage. Owing to these dangers the operation must be slowly and carefully performed. Every vessel should be carefully ligatured before it is divided, and any attempt at a wedge-resection should be abandoned. It will generally necessitate considerable pressure upon the gland, a much more severe hæmorrhage and rather rougher handling in order to control the bleeding.

(*e*) *Operative Technique.*—Free access to the gland is obtained by means of a collar incision, and for the same reason the pretracheal muscles should preferably be divided. The individual vessels are isolated in turn and divided between ligatures. The number of vessels to be tied and the amount of thyroid to be removed will of necessity vary with the severity of the case, and if the symptoms are very marked it may be necessary to be content with a small resection, and later, when the patient has improved, to carry out a further operation. My aim in suitable cases is to ligature and divide the superior vessels, the middle and inferior thyroid vein in the right side; to ligature and divide the left inferior thyroid vein, and to ligature the left superior thyroid vessels. These steps are accomplished in turn; the right lobe is then turned inwards, and the inferior thyroid artery ligatured in continuity as it lies on the longus colli muscle. The right lobe, except for a small slice on its posterior surface, is then removed together with the isthmus and the inferior and the internal portions of the left lobe. There is thus left the upper and middle portion of the left lobe, the superior vessels of which have been tied, and which is, therefore, supplied by the inferior thyroid artery and drained by the middle thyroid vein. After all bleeding has been controlled a tube is inserted and the pretracheal muscles are closed. The skin is sutured with silkworm gut.

(*f*) *After-treatment.*—After every operation upon the thyroid gland there will be a period of reaction, probably due to hyperthyroidism, and in this period danger arises. In fatal cases the patient will get more and more restless, the temperature and pulse will rapidly rise, sweating will be increased, and there will often be a condition of slight mania. In satisfactory cases the temperature may rise to 102° and the pulse to 140 or 160. As long as there is any such evidence of reaction the tube should be kept in place. Morphia should be given freely to overcome restlessness, and large quantities of fluid administered both by mouth and per rectum. The patient should be kept in bed for at least three weeks after operation, and after leaving hospital should be given strict rules as regards her life and diet. All form of excitement and stimulants should be avoided. The patient should live as much as possible in the fresh air, and a plain, simple diet with a relatively small amount of meat should be advocated.

Post-Operative Results.

It has been mentioned that in my own series the mortality has been 5 per cent. This probably could have been reduced, for in some of the earlier cases the operation was performed at what is now realised to be an unsuitable time. Until, however, these cases come up for treatment earlier in their disease, and until operation is sought before there are advanced secondary changes, there will still be an appreciable mortality. Of the cases that survived operation five have died later; one of these was from the recurrence of X ray carcinoma, two had developed diabetes, and two had succumbed with cardiac symptoms due to hyperthyroidism. Of the remaining 129 cases, 78 per cent. have been changed from disabled wrecks into people who are capable of living normal lives and of earning their living. In these, it is true, some still show exophthalmos, and have a pulse-rate which is likely to be increased upon excitement and exertion, but they are nevertheless able to live normal and happy lives. It must be remembered, too, that exophthalmos, although it will ultimately disappear entirely, may persist for a very long period, even when all other symptoms have disappeared. It should also be explained to the patients that after such an operation there is no immediate cure such as occurs with so many other surgical lesions, and the following stages can be recognised in every case:—

(1) *Stage of Reaction.*—This lasts for three to four days after operation, and the symptoms are those of hyperthyroidism.

(2) *Primary Improvement.*—When the patient leaves hospital it is often found that the pulse has fallen to normal, that the tremor has almost disappeared, and that there has been a remarkable and startling improvement. It will persist, as a rule, for two to three weeks.

(3) *Stage of Relapse.*—Whatever rules are given to the patients, it will usually be found that after they have returned home there is a certain return of their symptoms, and unless this relapse is appreciated it will be found to cause considerable disappointment. As a general rule it would last for only two to four months, but if the case is less satisfactory, or if insufficient thyroid have been removed, it may be prolonged very considerably, and, in fact, until a further portion of the enlarged thyroid is removed.

(4) *The Stage of Apparent Cure.*—It is only when cases have been watched very carefully for a prolonged period that it is realised that after operation they will show a complete freedom from all symptoms, but should there be any severe mental upset or disturbance the symptoms may recur. I have had experience of several such cases, apparently absolutely cured, who having been subjected to the disturbance and fear of an air raid, have had their symptoms return to a minor degree. As a general rule a short course of medical treatment was sufficient to overcome these symptoms. This period of instability would appear to last for some two to four years.

(5) *Stage of Complete Cure.*—This is the condition in which the patient is not only completely free from all symptoms, but can apparently be subjected to all normal shocks and disturbance without fear of recurrence.

There is a general fear, since some cases show a regression of the changes in the thyroid when under medical treatment, that similar changes might occur after operation, and since a relatively small portion of thyroid is left therefore myxœdema would result. I have no experience of any such complication. In my own series of true exophthalmic goitre there has never been any myxœdema after operation. Kocher[18] has had a similar experience, and it would seem that of the few cases reported the myxœdema appeared very shortly after operation, and was due to removal of too large a portion of the gland. I believe, therefore, that this danger is greatly exaggerated.

It will be evident to you that in the treatment of a very large number of the different forms of goitre I have advocated the use of medical measures. I feel, however, that no apology is needed for discussing a subject which is so largely medical, for the first lesson that you as surgeons have to learn is what cases should be so treated. If I have been able to indicate to you when not to operate as well as when to operate in lesions of the thyroid gland, I shall feel that I have not taken up your time in vain.

(*Continued at foot of next page.*)

THE ÆTIOLOGY OF KALA-AZAR AND TROPICAL SORE.

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THE theory which associated kala-azar with the bed bug, and which promised well in the initial experiments carried out by Patton[1] does not, up to the present, appear to have yielded definite results; the position with regard to other insect vectors incriminated in this disease and in tropical sore is also unsatisfactory. The fact that the common bed bug has a very wide distribution has been adduced with reason against the theory that it would prove to be the vector of a disease of such circumscribed distribution as kala-azar. In investigating these diseases, attention has been given to the flagellates which commonly infest various plant bugs, but these have been exonerated on account of the fact that the bugs do not bite man. An observation which I recently made in Sierra Leone may possibly serve to focus attention again on plant-feeding bugs.

Since Lafont's[2] discovery of the occurrence of flagellates of the genus Herpetomonas in plant juices—the latex of Euphorbia—more attention has been given to the flagellates which infect plant bugs, as well as to the natural flagellates of other insects. Laveran and Franchini[3] recorded their success in producing Leishmania forms of parasite in mice by injecting them with flagellates from insects; Fantham and Porter[4] and other observers have repeated and confirmed their experiments. Recently Roubaud and Franchini[5] obtained in mice infection with Leishmania forms of parasite by allowing fleas having a natural infection to breed in their box. The infection, which proves fatal to the mice, was conveyed to fresh mice by means of subcutaneous injection of ground-up tissues. These workers also obtained a similar result in mice by injecting into them the fæces of fleas.

Flagellate Infection among Plant Bugs.

The occurrence among plant bugs of flagellate infection has been emphasised by Patton[6], who described *Herpetomonas lygæi* and other such bug flagellates. Evidence is also available of the ability of the flagellates to infect the bugs, not only in the alimentary canal, but also in the salivary glands. Franchini[7] reports that he has cultivated flagellates *Herpetomonas pyrrhocoridis* from the alimentary canal and salivary glands of *Pyrrhocoris apterus*. Miss Robertson,[8] in Uganda, found the alimentary canal of the red cotton bug infected; she also found that another species of bug, *Leptoglossus membranaceus*, was commonly infected with Herpetomonas in the salivary glands. She refers with emphasis to "the independent development in a sucking insect of all the factors requisite for the transmission of a flagellate, parasitic in the intestine, by way of the mouth parts of the insect host."

Experiments of great interest were carried out by Franchini[9] in cultivating in media containing plant juice various natural flagellates of insects. He showed not only that such flagellates will develop readily in certain of these media, but also—what is of especial interest—that the parasite of tropical sore will grow in a medium containing certain plant juices. There is thus established a connexion biologically between a human parasite and the insect flagellate and plant juice, which I venture to think is not without significance. If we find that bugs, which as a rule live on plant juice and which are capable of harbouring flagellates in their gut and in their salivary glands, are able to bite man, it would be a strong argument for the thorough investigation of the habits and bionomics of such forms before their dismissal from consideration in connexion with kala-azar and tropical sore.

Do Plant Bugs Bite Man?

I desire here to draw attention to the fact that a cotton stainer, which is apparently restricted very closely to certain species of food plant, is capable of biting man. The species* of bug is *Dysdercus superstitiosus*, which at first, as the result of several experiments made by me in the laboratory, I concluded could not bite man. This year at Freetown I was bitten by this bug on the ankle on two occasions, April 24th and 26th, while sitting out of doors at dusk, and after many attempts was successful in getting one to bite experimentally. On each occasion there was a local reaction in the form of an irritating swelling, and on the third occasion this was followed by extensive swelling of the leg, with considerable œdema and great itching. There was no general reaction, no rise of temperature, no enlarged glands; no parasites were found in the blood, but there was great eosinophilia. This species of bug has been observed by me to feed in nature on the carcass of a dead frog. A near ally, *D. fasciatus*, has been recorded by Mansfield Aders[10] as feeding with avidity on fresh mammalian carcasses, skins, and skulls. Lamborn[11] says that during the dry season *D. superstitiosus* appeared to thrive on almost any

* Mr. Lang, of the British Museum, kindly identified the species for me.

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food of animal or vegetable origin, for eight or ten were noticed feeding on a dead and sun-dried lizard, and a batch of young nymphs were found on sheep's excreta. Peacock[12] gives an observation of young stainers of the same species feeding on a dead snail. The habits as regards food plants of these bugs confine them chiefly to cotton, the silk cotton tree, okra, and other Malvaceæ. While the obvious adaptability of such bugs makes it appear possible that in some districts they have acquired even greater readiness in biting man in nature, there is also the fact that they are in most cases very restricted either to certain areas or to certain food plants. On dissection of specimens of *Dysdercus superstitiosus*, I found that they were heavily infected in various portions of the alimentary canal with a Herpetomonas; this was also found in one case in cœlomic fluid.

I believe these observations to be worthy of record, although owing to their having taken place only a few days before my leaving Freetown, they are necessarily far from complete. In view of the present state of the kala-azar problem, I consider that they indicate the necessity of an investigation of all such forms, not only in countries where kala-azar abounds, but also in countries where tropical sore occurs.

NOTE.—In a letter received, since this article was written, from Dr. Maplestone at Freetown, he informs me that he has discovered infection of the salivary glands.

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KÖHLER'S DISEASE OF THE TARSAL SCAPHOID.

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SINCE Köhler showed his first three cases of this disease at Wiesbaden in 1908 and published an account of them,[1] the number of examples placed on record is inconsiderable. In 1915, when he reviewed the subject, there were only 26; since that time additional cases have been described by Maynard Heath,[2] O'Brien,[3] Hetzel,[4] Moreau,[5] Roederer,[6] Beltrandi,[7] but the disease must still be considered to be comparatively rare. The symptoms and physical signs are not obtrusive, spontaneous recovery seems to be the rule, and the precise diagnosis rests on the characteristic X ray appearances; it is probable, therefore, that the disease often escapes detection and that it is more common than the records indicate. The clinical picture is fairly clear-cut, although in details there are some differences of opinion.

Clinical Picture.

The disease occurs in young children, more frequently in boys, between the ages of 3 and 10 years. The onset is usually insidious, sometimes sudden,[8] with pain and swelling in the region of the tarsal scaphoid. Whilst it is generally unilateral, both feet are sometimes affected. The general health is usually indifferently good. The child develops a limp and shows more or less tendency to flat-foot. Spontaneous recovery always occurs, so far as present records show, in from 6 to 12 months from the date of diagnosis. The ultimate diagnosis rests on the X ray findings. On these, but not on their general interpretation, there seems to be general agreement. They are as follows.

(1) The affected bone is smaller than normal (half to quarter size); (2) the outline of the bone is irregular (Köhler omits to mention this fact); (3) the density of the bone is increased (estimated at two to four times); (4) the normal architecture of the bony trabeculæ has disappeared. To these may be added (5) the general shape of the scaphoid is altered, being more flattened from before back and not widened from side to side.

Ætiology.

When we consider the ætiology we find considerable diversity of opinion; the attempt to find analogues in Madelung's deformity of the wrist-joint, in Perthes's disease, in Schlätter's disease of the tibial tubercle, would be more helpful if the ætiology of these affections were less speculative. Kidner's report of a case of Perthes's disease, in which at an operation "a *Staphylococcus aureus* from a blood-stream infection" was found, is suggestive, but lacks confirmation. All authorities exclude rickets and syphilis as causative factors; most writers reject tuberculosis on grounds that appear inconclusive. Abrahamsen [9] strengthens the view that the disease is a simple "dystrophy" by citing the case of a boy aged 7 years, who without any (known) antecedent injury developed weakness of the right ankle. A skiagram showed that there was little or no sign of ossification present in the right scaphoid, although this process normally begins in the fourth year. In the left foot ossification was normal. After nearly three months' administration of thyroid extract a skiagram revealed typical Köhler's disease of the right tarsal scaphoid with a narrow, compressed, and dense centre of ossification.

Köhler himself shares this view, which receives confirmation from the fact that the disease may be bilateral (Köhler, 10 cases out of 26) and unassociated with any history of trauma. He also found a similar condition in the patella of the same side in one case. Rotch [10] found the twin brother of one case with similar X ray evidence in the scaphoid, but with no symptoms. The argument that the disease is a dystrophy is materially weakened, however, by Köhler's assertion that relapse sometimes occurs. Incidentally, his estimate of the duration of the disease at 2–3 years is shown by later observers to be too prolonged—in Maynard Heath's case,[11] as in mine, the bone had returned to an almost normal appearance in six months. Stümme [12] ascribes the disease to a compression fracture, and Preiser [13] supports his view by comparing it to a fracture of the carpal scaphoid. O'Brien [14] invokes a delay in ossification, stimulated by trauma to osteogenesis. Schultze [15] obtained a definite history of injury in six out of seven cases. Pfahler [16] dismisses injury on the ground of there being in many cases no history of such a cause and of the onset being often gradual. The latter assertion is generally conceded, and any injury is often so trivial that none can be recalled, but gradual onset and trivial injury as a provocative cause of tuberculous disease in the subject of a latent infection suggest more serious consideration of the view of Fassett,[17] who, so long ago as 1914, advanced the explanation that the lesion is a healed and sclerosed tuberculous infection.

The Question of Tuberculosis.

Although most authorities demur on account of the clinical course of the disease, and Hetzel [18] found the von Pirquet reaction negative, the new evidence I shall detail warrants a review of the clinical data and X ray appearances, none of which is incompatible with this theory. Dogmatic statements only serve to darken the night of our doubts, and should not be allowed to carry conviction.

Roederer,[19] reviewing the subject in 1920, asserts confidently that "les deux sexes sont indifféremment atteints." (Maynard Heath declares that the condition is *always* found in *boys* between 3 and 9 years.) Again, he says, "aucun de ces enfants n'est tuberculeux." And later he states "deux fois seulement l'enfant appartient à une famille tuberculeuse (Köhler 1, Schultze 1)." As to the positive grounds upon which the assertion that all the patients were free from tuberculosis is based, there is no evidence. Parental

tuberculous infection plays a more conspicuous part in the recorded cases than Roederer admits; in Maynard Heath's case the father was tuberculous.

Let me quote from the excellent description of a case recorded by Dr. Giovanni Beltrandi.[20]

Boy, aged 6½ years, of healthy parents. The mother states that about two years prior to admission to the hospital the boy had a fall, hurting his foot, with the result that he was lame for some time; occasionally, at long intervals, he complained of pain in the left foot, lasting for about an hour. Nothing untoward could be established until, two weeks before, she noticed that the foot was swollen, while the pain was more severe than usual. On examination, on the dorsal and internal aspect of the left foot an irregular protuberance was observed, extending from the tibio-tarsal line to the metatarsic tarsus. The skin over this protuberance presents a very marked venous network. The circumference of the left foot, measured over the protuberance, exceeds by 1·5 cm. that of the right foot. The swelling is sensitive to pressure, and all active movements of the foot are reduced.

FIG. 1.

FIG. 2.

Right tarsus, (1) from above; (2) external aspect. Seq. = sequestrum; C.I, II, II = internal, middle, and external cuneiform bones; Sc. = scaphoid; Cu. = cubiod; Ast. = astragalus; Os Ca. = os calcis,

An X ray examination of the foot showed that the scaphoid bone was reduced in volume to one quarter of the normal size. It also appeared to be divided into two parts; in the smaller of the two the cortical and spongy substances show no line of demarcation, and the pronounced shadow points to the fact that there is a marked increase in the content of the calcium salts in the scaphoid. In the larger portion the absence of any osseous organisation was also apparent. The scaphoid of the right foot also exhibited the same picture, but not in so pronounced a degree.

A Case of the Author's.

In the following case the chief features will be found to be similar.

A male child, aged 5 10 12 years, was active but had always been delicate. His mother was delicate and his father had suffered for years from definite pulmonary tuberculosis. About Dec. 10th, 1919, the boy sustained an injury to his right foot. Soon afterwards he fell ill with chicken-pox. During convalescence he complained of pain in the right foot, and on attempting to walk displayed a well-marked limp.

Condition on Examination.—Early in February, 1920, he was referred to me. He was at that time pale and frail-looking, but alert and intelligent. He limped obviously on the right foot, which showed a swelling over the region of the scaphoid bone, most marked on the dorsum of the foot. The skin over the swelling was thin and smooth with increase in the venous network. Pressure on the swelling caused pain, but no œdema was present. Movements at the midtarsal joint were limited.

X Ray Findings.—A tentative diagnosis of early tuberculous disease of the tarsus was made and skiagrams taken. These showed all the stigmata of Köhler's disease. In Figs. 1 and 2 the scaphoid bone of the right foot is seen to be smaller than normal, narrowed antero-posteriorly, irregular in outline, the density of the bone much increased, and the normal architecture blurred. In Fig. 1, however, there is a new feature, not observed in the record of any previous case—namely, a tiny sequestrum (indicated by an arrow) no larger than a millet seed, lying in the soft tissues, supero-internal to the scaphoid. In the latter bone there is a deep hollow much larger than the sequestrum, and from which the latter has evidently been discharged. In the photographs taken five months later (July) the hollow had become a cleft, with the opening on the surface of the bone showing as a mere dimple; the density of the bone has become less marked, and there was an increase in the thickness of the bone. In October another photograph revealed a scaphoid almost normal in shape and density, and in which the natural architecture of the bone is reappearing.

Course of Case.—The possibility of fracture was considered and rejected—the appearances were plainly those of a caries. Examination did not reveal any signs of a developed tuberculous lesion in any other part of the body, but, considering his environment (his father definitely tuberculous, his mother probably also affected), it is not surprising that the boy has since developed undoubted pulmonary tuberculosis.

The alleged injury occurred in December, 1919, and the first skiagram was taken early in February, 1920, after which the foot was fixed in plaster-of-Paris. Open-air treatment was carried out, and the foot kept at rest by re-applications of plaster until September, 1920; the arch of the foot was then found to be weakened; there was a slight degree of flat-foot but no thickening of the scaphoid, or around it, could be made out. By the aid of massage, exercises, rest, and raising of the inner side of the sole of his right boot, complete functional recovery followed by the end of the year.

Remarks.

In reviewing the cases recorded in the literature it is certain that no real causa causans emerges from a theory of "dystrophy" or "delay in ossification" later "stimulated to osteogenesis by trauma." Indeed, a history of trauma could probably be obtained in every case from parents of average intelligence and memory, by careful and persistent investigation, especially if the period inquired into is allowed to stretch as far back as two years before the detection of the disease, and to include injury of any degree of severity.

The conception of the disease awakened by the case I have described is that in a child the subject of a latent mild tuberculous infection there is lighted up (possibly by an injury of moderate severity) a smouldering tuberculosis of the scaphoid bone of the foot, the bone which, being the keystone of the arch, is most subject to strains, stresses, and blows. The early stage, evidenced by a rarefying osteitis, gives rise to such trifling clinical signs that no complaint is made, no X ray examination carried out (unless it be done fortuitously as in Abrahamsen's case[20]), and the disease escapes recognition. Should the disease progress and spread to neighbouring bones the case is diagnosed as a frank tuberculosis of the tarsal bones. But should resolution occur and a reparative sclerosis take place, either no diagnosis other than "sprain" or incipient flat-foot is made, or an X ray examination is made, and the condition found is called Köhler's disease. It is natural then that recovery should "always occur" since the disease is already recovering when detected.

My case is a border-line case, in which actual necrosis to a very limited extent had occurred, but in which

the battle had really been won, and which had become, five months after the first observation, a typical case of ordinary Köhler's disease. In every case hitherto recorded the pathology has been deduced from probabilities. This appears to be the first instance of a definite linking-up of the condition with a known disease.

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SYMPHYSIOTOMY, CRANIOTOMY, AND CÆSAREAN SECTION.*

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A STUDY of the case records in the Dundee Royal Infirmary Maternity Department from 1901 to the end of 1922 has brought various points of interest into view.

SYMPHYSIOTOMY.

During the period 1901 to 1922 symphysiotomy was performed 12 times. The usual indication was contracted pelvis. It may be taken for granted that no one would have recourse to this operation without first having given forceps a fair trial, not to mention Walcher's position, at least in many cases. In one case in this series a brow presentation was given as the indication. Obviously symphysiotomy is of no avail except in mild degrees of disparity between fœtal head and pelvic brim.

The increase in measurement available with an interval between the pubic bones of 6 cm. (2⅜ in.) is not very great at the brim, but is of considerably more value, according to Munro Kerr, at the outlet between the ischial tuberosities. The estimated increase at the brim with a separation of 6 cm. is as follows: Antero-posterior diameter, 1 cm. (⅜ in.); oblique diameter, 1·5 cm. (⅝ in.); transverse diameter, 2 cm. (⅞ in.).

Dangers of Symphysiotomy.

The operation is not to be undertaken lightly, for it has its dangers. There is quite a definite maternal death-rate and, apart from loss of life, there are various morbid conditions which may affect the mother. The chief danger is sepsis, and this may go so far as to cause sloughing of part at least of the vaginal wall. Cystitis may also develop, and one must not forget the possibility of injury to the sacro-iliac joints. There is also a fœtal mortality associated with this procedure. It is possible that this might be somewhat reduced if the need for symphysiotomy were recognised sufficiently early, for, no doubt, too strenuous efforts to extract the child with forceps may in many cases turn the scale in the wrong direction and lead to the death of the child.

Symphysiotomy is an operation of limited value and should only be performed under good conditions and if proper after-care is available.

CRANIOTOMY.

With increased antenatal care one would have expected a distinct drop in the number of craniotomy cases, but in the period specified the largest number was done in 1921. It is important that antenatal care should extend to all private patients as well as to hospital ones. If the private case develops into an emergency (in the private house), the chance of a happy issue is less than in the case of a hospital patient unless, as is only occasionally the case, the patient can be removed to a nursing home. As a rule, by the time the emergency has arisen, it would be inadvisable to remove the patient. So the best thing must be done under inconvenient circumstances, and that may mean craniotomy.

In every private and hospital case the ideal is that the pelvic measurements should be known well beforehand, as also the position and presentation of the child, the relation in size of the presenting part to the pelvic brim, and the state of the urine. If this were done as a routine, and if preventive measures were carried out, there would be fewer bad results to both mother and child. Craniotomy is, at best, a revolting operation, especially if carried out on the living child. Any operation involving a death-rate of 100 per cent. to the child cannot be an ideal and can only be recommended as the best thing to do under bad circumstances.

At the end of 1922 there was a leading article in THE LANCET on Justifiable Fœticide,[1] which was commented on by (presumably) a Roman Catholic doctor[2]; what the latter said is worth recording, for no doubt most medical men are aware that the destruction of the living child in utero is strictly against the dictates of the Roman Catholic Church. I quote from the doctor's letter: "The teaching of the Church with regard to craniotomy is quite clear and definite, it is not permissible under any circumstances." Then there is the order given in Latin. He goes on: "This decision was given at Rome, August 19th, 1888, and repeated with the papal approbation on July 24th, 1895."

That is all very well, and I do not wish to start a controversial argument here on this decision. But what I wish to point out is that apparently the authorities of the Roman Catholic Church do not recognise that in allowing the mother to die by neglect of a craniotomy they are still not saving the child, for a dead mother, in these circumstances, would mean a dead unborn child. There would thus be the certainty of two deaths as against one. Although most of us, no doubt, do not agree with a strict order against craniotomy on the living child, yet we must all be at one in holding that such a procedure should be avoided if it is at all possible and consonant with the safety of the mother.

There are substitutes—namely, induction of labour and Cæsarean section, not to mention symphysiotomy or pubiotomy—under certain circumstances. Proper antenatal care will give the best chance for calling these substitutes into play. Of the cases of craniotomy in this series by far the commonest indication was contracted pelvis. There were three cases in which hydrocephalus was the indication, and in a few cases the operation was performed for various other conditions. In three of the cases the after-coming head was perforated. From a study of the case-sheets it would appear that nearly all, if not actually all, of the children were already dead before craniotomy was done, forceps having been found to be ineffectual.

This series shows that there is a real danger of death or of morbidity to the mothers. With much interference there is a particular liability to septic invasion and the patient, too, may become worn out and collapsed. In two cases rupture of the uterus is reported.

Perhaps the three chief morbid results, apart from death, which may follow craniotomy are: 1. Sepsis, from much interference, involving the uterine cavity.

* Based on a paper read before the Forfarshire Medical Association, in which the actual statistics were given.

[1] THE LANCET, 1922, ii., 1182. [2] Ibid., 1358.

2. Septic infection of tears, chiefly of the vagina, due to laceration by sharp pieces of the broken-up fœtal skull. 3. Fistulæ—vesico-vaginal or recto-vaginal—probably from injury with subsequent ulceration through to bladder or rectum, rather than from direct laceration right through to one or other cavity at the time of extraction.

CÆSAREAN SECTION.

The cases of Cæsarean section, as would be expected, have increased in numbers as the years have gone by, the greatest number being recorded in 1922. It is to be expected that the yearly number of these cases will increase, within limits, for some time to come, mainly because of increasing antenatal care and anticipation of troublesome complications. On the other hand, it is quite reasonable to suggest that cases of Cæsarean section may be limited in number by induction of premature labour in selected cases. But Munro Kerr would seem not to agree with such a statement, for he says: "Induction of labour does not come into competition with Cæsarean section, for very rarely are the results from induction satisfactory if the conjugata vera is under 3¼ inches."

One might say that in the mother's interests, in cases of contracted pelvis of varying degree, and if forceps are not likely to avail, induction is the procedure of choice, Cæsarean section the best thing to do if induction is contra-indicated, and craniotomy an unfortunate necessity, as applied to the living child, when other and better means are not available. In a few cases symphysiotomy or pubiotomy may be considered. Nevertheless, much may be done by giving plenty of time during labour, combined with Walcher's position in cases of mildly contracted pelvis, taking for granted that presentation and position are normal. It is well in those slow cases to employ twilight sleep.

Cæsarean section, being a comparatively easy and somewhat spectacular operation, is apt to be abused and employed unnecessarily.

Of the patients in this series—representing 57 operations—30 were primiparæ and 27 were multiparæ. The patients actually numbered 50, as two were operated on three times and three were operated on twice. In addition, one patient had her second Cæsarean section performed in the Dundee Royal Infirmary, the first having been done in America.

Cæsarean section is not without its dangers to the mothers, and certain morbid sequelæ, or even death, may result. This must be taken into account in deciding between this and some other procedure. Also there is quite a definite fœtal mortality, so that in a few instances the objective may be at least partly lost on this account. A few cases may be recorded by way of indicating the worth of the operation when properly applied:—

CASE 1.—First child, premature, died in 29 hours; second child, symphysiotomy, died; third child, Cæsarean section, alive and mature.

CASE 2.—Three children, craniotomy each time; fourth child, Cæsarean section, alive and mature.

CASE 3.—First and second children, instruments, stillborn; third child, Cæsarean section, alive and mature.

CASE 4.—First child, instruments, stillborn; second child, Cæsarean section, stillborn; third child, Cæsarean section, alive and mature; fourth child, Cæsarean section, alive and mature.

The indications in the present series (totalling 57) were:—

Contracted pelvis	51
Contracted pelvis and malposition	1
Carcinoma of rectum	1
Placenta prævia	2
Reason not stated	2

As the operation results have improved, so have the indications increased, but discrimination and forbearance are required lest it be undertaken rashly and without necessity. For there are not only immediate dangers, but late ones, such as rupture of the uterine scar at a subsequent pregnancy.

Indications.

1. *Contracted pelvis.*—This is the commonest indication. This may be actual or relative, for a post-mature child passing through a normal pelvis will create the same problem as an ordinarily mature child passing through a narrow pelvis. Pelvic measurements taken in advance are of great value, but, as it is said, the best pelvimeter is the fœtal head. The relationship can usually be fairly accurately estimated by abdominal or bimanual palpation. Thus a decision may be come to either for or against the operation in any given case. Roughly speaking, a conjugata vera of 3¼ inches or less is likely to lead one to consider the advisability of performing Cæsarean section, unless the child is very small.

If the child be dead, craniotomy would be the operation of choice, unless the pelvic contraction or deformity is too great for that to be justified.

2. *Tumours.*—These are chiefly fibroids and ovarian tumours. As pregnancy advances, or in the early stages of labour, the tumour may rise out of the pelvis and thus cease to be a cause of obstruction. If it remains in the pelvis Cæsarean section is indicated, for it is dangerous to both mother and child to try to drag the child past the obstruction. A thin-walled cyst might rupture during the process and thus remove the trouble. Under proper circumstances it may be deemed wise to remove a tumour, when recognised, during pregnancy, deliberately running the risk of inducing premature labour by such interference. More often it would be indicated to do a Cæsarean section at term and deal with the tumour at the same time. Other tumours need not be specified.

3. *Eclampsia.*—The indication for Cæsarean section in this condition is not very great. The child is often dead in any case, and the results to the mother do not greatly encourage recourse to this method of treatment. Success might possibly be more frequently ascribed to Cæsarean section if it were carried out in the early stages of the eclampsia. At the British Congress of Obstetrics and Gynæcology held in Liverpool in June, 1922, Cæsarean section did not take a very high place in the treatment of eclampsia. The cases were divided into mild (M.) and severe (S.).

Maternal mortality.	London.		Midland.		Aggregate.	
	M.	S.	M.	S.	M.	S.
(*a*) Natural delivery ..	6·0	20·5	3·6	44·0	4·5	36·9
(*b*) Assisted delivery ..	5·0	33·3	8·0	29·4	5·5	31·7
(*c*) Induction	5·1	20·8	11·7	40·0	6·6	26·4
(*d*) Cæsarean section ..	9·8	43·2	50·0	75·0	11·3	46·3
(*e*) Accouchement forcé ..	25·0	60·0	14·3	66·0	18·1	63·1

Cæsarean section may be required in cases of eclampsia for some other reason, quite apart from the eclampsia itself—e.g., contracted pelvis.

4. *Placenta Prævia.*—Lawson Tait recommended Cæsarean section for this condition in 1898. In selected cases this may be the operation of choice, under suitable conditions, as one would not expect the maternal death-rate to be raised, and certainly the fœtal death-rate should be lowered very considerably. But one would deem it wise to operate very early in labour, or just before its onset, before the placental circulation has become seriously embarrassed or cut off, and before much vaginal examining has been done, involving the greater risk of sepsis. It would seem unwise to advocate the operation in merely marginal cases and also in cases in which there has been so much bleeding with, presumably, wide separation of the placenta, that the child must almost certainly be dead.

5. *Accidental Hæmorrhage.*—Cæsarean section would rarely if ever be done for this complication in mild cases, and in severe cases the child would usually be dead. Hence the indication would be to save the mother, if it is considered that bleeding is still going on to a dangerous extent, and if she cannot be delivered quickly enough in the normal way, or if it is considered that she might stand Cæsarean section

but would very likely succumb to the prolonged strain of labour.

Other Indications.—Other possible indications, which may be briefly dismissed, are as follows:—

(*a*) A uterus which has had one or other fixation operation performed on it which will limit its power of expansion in the proper form and is thus in danger of rupturing or of becoming impacted.

(*b*) The operation might be justifiable in a very few cases of prolapse of the cord if the child were still actively alive and if the cord could not be retained in the uterus.

(*c*) It might be done occasionally in certain cases of malpresentation or malformation of the fœtus, and in certain cases of abnormality of the maternal passages—e.g., retraction ring, rigid os, bone tumour, and so forth.

(*d*) Some diseases might also be considered as indications for the operation, such as certain forms of cardiac disease.

In the present series there were eight re-operation cases. In one of these (third Cæsarean section) the uterine wall was said to be thin from old scars, and in another case (second Cæsarean section) the lower part of the old scar was found to have given way after the placenta had been removed. It is no uncommon experience, however, to be unable to find a previous scar at the time of a subsequent operation.

Eardley Holland gives the frequency of rupture of Cæsarean section scars in subsequent pregnancies as 4 per cent., the cause being imperfect healing leading to a thin scar which stretches during pregnancy and ruptures on account of increased intra-uterine pressure either during pregnancy or during labour, or, it may be, from an accidental cause.

The chief cause of imperfect healing is, no doubt, infection and possibly the suture material may have something to do with it. Holland seems to be against catgut as a suture material, stating that there is two-and-a-half times the liability to rupture subsequently if it has been employed. He rather favours silkworm gut, although this is a material which, for other purposes, is rarely if ever employed for buried sutures. Any kind of suture material—catgut, silk, silkworm gut—may give excellent results if sepsis is avoided and if the whole thickness of the uterine wall is brought into accurate apposition.

Of the 57 cases, 52 were in labour, 1 was not, and in 4 cases this point was not indicated. One advantage of the patient being in labour when the operation is carried out is that drainage downwards may be more effective, as the os will be definitely open. Also it more or less ensures, as nearly as can be, the full maturity of the child. It is said that the uterus will contract better afterwards if labour is in progress, but the stimulus of the operative interference is quite sufficient for this purpose in the case of a normal uterus. It has been suggested, too, that in primiparæ there may be more tendency to trouble from after-pains, if the operation has been performed before the onset of labour, on account of the retention of discharges in the cavity of the uterus.

But a possible disadvantage in waiting till labour comes on is that arrangements may have to be made in a hurry and results may be prejudiced where such an emergency arises in private practice, necessitating transport to a nursing home at a time when the patient is not very fit for it. It is probably better in a private case, if Cæsarean section has been decided on, to do it at a given date, as nearly as possible just before labour is due to start, or to have the patient in a home in good time and let her wait till labour has just started before operating. It must not be forgotten that there is a distinct danger of sepsis with tragic results if a Cæsarean section is done on a patient who has been much examined or on whom attempts at delivery per vaginam have been unsuccessfully made. Many operators would rather do a craniotomy under such circumstances. The maternal death-rate in Cæsarean section is by no means negligible, death being due to such causes as sepsis and pulmonary embolism.

Sterilisation of patients is a matter for judgment in each case. Sometimes there may be little doubt in coming to a decision. For example, the risk of sepsis may be so great from previous interference that even a hysterectomy may be considered necessary. Again, a uterus may be so damaged by previous Cæsarean sections that it may be advisable to sterilise the patient. But nowadays it is rarely right to sterilise after the first Cæsarean section or at a subsequent one if no living child has been born and has survived, unless the uterine condition is such as to forbid the risk of another pregnancy.

I am indebted to Dr. R. C. Buist and Prof. J. A. Kynoch for permission to use their case records.

TUBERCULOSIS OF THE PERICARDIUM.

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TUBERCULOSIS of the pericardium is not of very common occurrence, and many authors deny altogether the existence of primary pericardial tuberculosis. Hedblom[1] has recently collected from the literature eight cases in which the pericardium was considered to be the primary seat of the disease. F. T. Roberts[2] points out the rarity of miliary tuberculosis of the serous pericardium as compared with other serous membranes, and states that most of the cases are chronic, and secondary to tuberculosis elsewhere, especially of the lungs and bronchial glands. He emphasises the fact that, even in such cases where pericarditis actually exists, it is sometimes difficult or impossible to prove, either histologically or bacteriologically, its tuberculous origin.

Table I. is an analysis of 83 cases of pericarditis which were admitted into the medical wards of St. George's Hospital between the years 1911 and 1921. This number excludes cases of hydropericardium due to back pressure.

TABLE I.—*Analysis of 83 Cases of Pericarditis.*

Type.	No. of cases.	Male.	Female.	Average age.	Percentage.
Rheumatic ..	54	28	26	15·7	65·5
Renal	13	7	6	36·9	15·7
Pneumonic ..	9	7	2	17·3	10·9
Septic	4	2	2	28·7	4·3
Tuberculous ..	3	1	2	20·3	3·6

TABLE II.—*Details of the Three "Tuberculous" Cases in Table I.*

Case.	Sex.	Age.	Pericardium.	Tuberculosis elsewhere.	Remarks.
1	M	8	Miliary T.B. of serous coat with effusion.	Caseating tuberculosis of mediastinal glands. Miliary T.B. lungs, pleuræ, and generalised.	—
2	F	50	Chronic adhesive pericarditis. Serous coat studded with tubercles.	Bilateral apical pulmonary tubercle with bilateral pleural effusions.	Old history pleurisy, with effusion.
3	F	3	Acute sero-fibrinous pericarditis, with 3 oz. of effusion. Early endocarditis of mitral valve.	Caseating tuberculosis of infra-tracheal glands. Scattered T.B. in lungs, liver, and elsewhere.	Pericarditis, possibly rheumatic in origin.

Table II. gives details of the three cases, 3·6 per cent. of the total, which were regarded as being tuberculous in origin. It will be noted that in the first two cases there was miliary tuberculosis of the

[1] Hedblom: Surgical Clinics of North America, Oct. 21st, 1921.
[2] Roberts, F. T.: Allbutt and Rolleston's System of Medicine.

serous coat, but evidence pointed to the spread of this process from elsewhere. In the third case, the tuberculous origin of the process was doubtful.

In view of the preceding remarks, the following case, which is not included in the above series, is of interest.

A girl, aged 6, admitted into St. George's Hospital on Jan. 22nd, 1922. According to her mother, she came of a healthy stock, had suffered from influenza, possibly accompanied by left-sided pneumonia, in 1919, but had been perfectly well ever since, until Dec. 28th, 1921. On that day she was feverish, complained of sore throat and rather severe epigastric pain, unaccompanied by vomiting, which passed off after 24 hours. Subsequently there was no return of pain, nor was there undue shortness of breath, but she remained languid, with lack of appetite, and desire to rest. On Jan. 15th there was rather severe cough, she appeared very ill, and was feverish at night.

Condition on Admission.—She appeared well nourished, the tongue was coated, the fauces were not injected, and the tonsils not large. The temperature was 100·8° F., pulse 140, and respirations 44. The apex beat could be felt with difficulty in the normal position; there was no apparent increase in the cardiac dullness, though præcordial percussion was painful. Heart sounds, though distant, appeared not abnormal, and no friction or murmurs were present. Comparative dullness, with very poor air entry, at both bases.

Course of Case.—Subsequent to admission the temperature was erratic, tending to rise to 100° at times, and sometimes normal for 24 hours, but the pulse and respiration-rate remained high, the degree of illness present greatly exceeding the signs of organic disease. On the 24th a skiagram of chest suggested the presence of fluid at both bases. The pericardial shadow was not unduly large, and showed no truncation of the cardio-hepatic angle. On the 28th the left base was explored, and 150 c.cm. of clear sterile fluid was removed, the small lymphocyte being the predominant cell present, though polymorphonuclear and endothelial cells were also numerous. The course of the disease was unaffected by this procedure, and death occurred rather suddenly and unexpectedly on the 28th.

Necropsy.—Both pleuræ contained 8 oz. of clear fluid, and there were recent adhesions at both bases. Both the parietal and visceral pleuræ were free from obvious tubercle. The lungs were intensely engorged, with collapse at the bases, but no tubercles were present either on the surface or on section. The pericardium was fairly firmly adherent to the back of the sternum and costal cartilages by rather fleshy pink adhesions, which appeared to consist partly of fibrous tissue and partly of a substance resembling granulation tissue. There was severe chronic proliferative pericarditis, both fibrous and serous coats being much thickened and laminated, varying in places from ¼ to ½ inch in thickness, especially at the apex. The inner surface of the pericardium and epicardium was covered by a thick "pile" of granulations, to which were adherent pedunculated masses of partially organised lymph, these masses being remarkably uniform in size, and somewhat resembling "melon-seed bodies." Some of these masses formed adhesions between the layers, imperfectly dividing the cavity into loculi, which contained a little turbid fluid. No recognisable tubercles were present. The heart muscle, on section, was firm and good, there being no mural tubercles. The valves were normal. The peritoneum showed severe œdema, and contained ten oz. of fluid similar to that from the pleura, but showed no tubercle. The liver was hard, and showed early "nutmeg" change. Scattered over its capsule were a few tubercles of the size of a pin's head, some of them showing commencing caseation, whilst, on section, a few similar tubercles were scattered throughout. The spleen was hard, firm, and tough on section. On its anterior margin was a caseating tuberculous focus of the size of a pea, whilst, on section, there were scattered foci resembling those of the liver. The kidneys were normal and free from tubercle, and there was no tuberculosis elsewhere. The lymphatic glands showed no obvious abnormality, whilst the infra-tracheal glands, believed by many to be the focus from which tuberculosis spreads to the pericardium, were very small and insignificant.

Microscopically, several mediastinal lymph glands were examined, and in all there was marked venous engorgement, though no tubercle was detected. Sections stained by Ziehl-Neelsen's method showed no tubercle bacilli. Sections from the pericardium showed great increase in thickness of the fibrous coat, the tissues being laminated and very cellular, the spaces between the laminæ being richly infiltrated with round cells, in some places these being so massed as to present the appearance of lymphoid tissue. The serous coat was not recognisable, but was replaced by typical granulation tissue, with loops of new and well-formed capillary vessels reaching to the surface. No giant-cell systems were recognisable, and no tubercle bacilli were present in the granulation tissue. Sections through the lymph masses showed thick fibrin, with many degenerated white cells and masses of their nuclear debris.

The interest in this case lies in the relation of the pericarditis to the tuberculous lesions, and further emphasises the care with which these cases should be investigated. It was unfortunate that, in this case, no inoculation tests were undertaken with material from the pericardium. The pleural and peritoneal exudates probably resulted from back pressure, a supposition supported not only by the hepatic condition, but also by the remarkable degree of œdema of the peritoneum. If it is assumed that the pericarditis was tuberculous in origin, in view of its chronic proliferative nature it would appear to have been the primary seat of the disease. If, on the other hand, the pericarditis was due to other causes, as from a tonsillar organism, it is difficult to explain the focus from which the miliary tubercles in the spleen and liver originated.

Clinical and Laboratory Notes.

NOTE ON "BAKERS' ECZEMA."

BY ARNOLD ROWSBY TANKARD, F.I.C.,
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IN January, 1913, a journeyman baker called to show me his forearms, which almost up to the elbows presented a definite eczematous condition. This "eczema" became at times so severe that it was difficult for the bakers to continue their employment. It appeared that several different kinds of wheat-flour were used for bread-making at the bakery in question, but the bakers had noticed that it was only with one brand of flour that the "eczema" made its appearance. Several bakers were affected by irritation of the hands and arms, and later with "eczema," when this particular flour was being worked up.

As a sample of the flour revealed no abnormality of composition when subjected to the usual methods of chemical analysis, I made a careful study of the patent literature dealing with the addition of so-called "improvers" to flour, and from a formidable list of chemicals which have been suggested for this purpose several were chosen for investigation. Without going into further detail, it may be stated that one of the substances considered likely to cause trouble when brought into contact with delicate skin surfaces was potassium persulphate, owing to its known acid formation when moistened with water:—

$$2\ K_2S_2O_8 + 2\ H_2O = 4\ KHSO_4 + O_2.$$

Potassium persulphate. Potassium acid sulphate.

Investigation showed that the suspected flour contained this chemical to an appreciable extent, although the amount was not sufficient to cause any noticeable increase of the normal content of mineral matter present in flour of that grade.

The information given to me by the baker made it quite clear that this flour containing persulphates was the only one causing any trouble, and it was stated that the men were declining to work this particular flour owing to its action on the skin. Later, samples of this flour obtained from the miller on delivery to a local grocer were examined and found to contain potassium persulphate, and action was then taken under the Sale of Food and Drugs Acts against the actual miller for selling flour not of the nature, substance, and quality demanded, by reason of the fact that it contained a foreign mineral substance, potassium persulphate, to the extent of 6·3 parts per 100,000. The case was heard before the stipendiary magistrate at Hull in 1913, the hearing occupying four days, but after the expenditure of a considerable sum of public money, with the sole idea of protecting the public from the undeclared addition of foreign substances to flour—substances which may or may not be harmful, either in themselves or by reason of

impurities introduced with them—the case was dismissed, each side paying its own costs. The opinion of the Local Government Board at that period was that the law as it stood was sufficiently strong to prevent such additions, but this case showed that such practices could not be effectually stopped by action under the Sale of Food and Drugs Acts; and although a Bill was introduced some years ago into Parliament making provision for such cases, it was not proceeded with, and the present position remains quite unsatisfactory. It had been hoped by many food chemists and others that the Ministry of Health would before now have taken steps to prevent such additions to flour, but unfortunately nothing has been done in this direction.

THE LANCET, in an annotation in its issue of July 7th[1] last, cites a case of sensitisation to wheat-flour which produced chronic eczema in a woman; and O. de Jong, in a recent paper on "A Suggested Ætiology of Bakers' Dermatitis."[2] accounts for such cases by the presence of salt in the yeast mixture and in the dough handled by bakers. If this explanation is sound, then a similar condition amongst bakers should have been common for many years. This, however, is contrary to my information. It would be interesting to know whether these skin affections among bakery workers occurred with any frequency prior to 1911, the date of the first patent for the use of persulphates as "flour-improvers," and whether the flour handled by de Jong's patients contained this chemical. A flour may appear normal in every respect and yet contain persulphates, for which a specific search must be made. In Hull, at least, common salt without persulphate in the flour caused no such trouble to the bakers in the particular bakery where my informant was engaged.

The cases of "bakers' eczema" which have occurred in this city, so far as they are known to me, have always resulted from the handling of "wetted" flour—that is to say, the dough mixture, which to a greater or less extent comes into contact with the arms during the process of hand-mixing. This is precisely what one would expect in the case of a substance like potassium persulphate, which decomposes fairly rapidly under these conditions, with formation of potassium acid sulphate, as stated. I have no doubt that, so far as the cases brought to my notice in Hull are concerned, the cause was the presence of potassium persulphate in the flour, since (1) only when flour containing potassium persulphate was being used was any skin trouble evident, and then only when the flour was handled in a moistened state; and (2) when this flour was not used, but flour free from potassium persulphate substituted, with salt, yeast, &c., as usual, no trouble was experienced, and the eczematous condition of the skin of the affected workers gradually disappeared.

HERNIA OF THE VERMIFORM APPENDIX THROUGH HESSELBACH'S TRIANGLE.

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THE following case of a hernia of the appendix merits record:—

A male, aged 70, was admitted to this hospital under the care of Mr. W. B. Cosens with the diagnosis of right strangulated hernia. He had a previous history of left inguinal hernia for 20 years, with no history of any trouble on the right side. On examination a tumour, the size of a small tangerine orange, was found occupying the region just above the inner third of the right Poupart's ligament; the mass was tender, with slight lateral movement, and pain was referred to the umbilicus. The early symptoms of strangulation had been present for 24 hours.

Operation revealed the appendix in a mass of omental adhesions passing through Hesselbach's triangle; the inguinal canal was normal.

It would be interesting to know if there has been any case reported of the appendix *alone* finding its way through this anatomical region.

[1] THE LANCET, 1923, ii., 28. [2] Ibid., 1923, i., 894.

Reviews and Notices of Books.

THE OLDER UNIVERSITIES OF ENGLAND: OXFORD AND CAMBRIDGE.

By ALBERT MANSBRIDGE, Hon. M.A. Oxon. London: Longmans, Green and Co. 1923. Pp. 296. 7*s.* 6*d.*

THIS remarkable book is written by one who was not educated at either university, but who in some mysterious way understands the university spirit and is quite alive to the influence which Oxford and Cambridge should, and as a rule do, exercise. There are still some who sigh for the placid days before 1850 when the Commission was instituted which so vexed the soul of Archdeacon Grantly and many another, when the Hebdomadal Council was all powerful and when Newman in the pulpit of the University Church was making young men to realise the fact that they had spiritual duties to perform.

It was between 1870 and 1880 that both universities awoke to the fact that what is now called "social service" was a duty which the rich owed to the poor, and a university sermon by Pusey preached in 1875 laid solemn stress upon this:—

"Many of you, my sons, are provided with superfluities. You have not to stint yourselves as to the pleasures of your age. Day by day, I suppose, passes with all conveniences of life or amusement, or some self-indulgences, which though not directly sinful, are rather injurious. If our Lord was to come now, in how many do you think that you could tell Him that you had fed Him, clothed Him, supplied Him when sick? Some, I fear, could not say that they had bestowed as much upon Christ as upon their dogs."

But though individual members of the university, as is shown by the foundation of university settlements, were not deaf to the call of those who had never enjoyed a university career, practically nothing was done to make the way of the poor scholar easier. One of the evils wrought by the Commission of 1850 was the abolition of the "poverty clauses" and the substitution of "merit" which meant ability to pass examinations, an abolition which Dean Burgon deplored (v., p. 109). So, says Mr. Mansbridge on the same page, "the most difficult time for the poor scholar to get to Oxford or Cambridge was from 1854 to 1904." But although Mr. Mansbridge is all for giving working men and women every facility of access to university life and teaching he is no iconoclast. He recognises that there is in university life an atmosphere or environment which makes men love knowledge for its own sake and not for that of utility.

"Directly Oxford and Cambridge seek to conform themselves to modern needs, to justify themselves to the Philistines outside—however excellent in other ways such Philistines may be—they may do more work which can be recorded in elaborate tomes, they may send out more young men to perform the tasks of the city and the factory, but they will lose that ineffable charm, that pulsating power, that mysterious influence which calls forth the veneration of men in other universities and in other lands,"

and he quotes with approval the remark of a Master of Corpus, Cambridge: "Cambridge is not primarily a place of learning or a place of examination. It is a place where you live three years."

Mr. John Mansbridge's illustrations are worthy of the book, especially the reproductions from pencil sketches; his drawings in Loggan's style are not so successful and the view of Magdalen is really bad. We have noticed a few slips in the text—e.g., on p. 217 Tennyson's date is given as 1809–1902, instead of 1892, and in the index Dr. Routh is entered as Master of Magdalen instead of President. But until we read the book we could not have believed that an outsider could so have caught the spirit of a university or have written so sympathetically. Mr. Albert Mansbridge was nominated as one of the Commissioners of 1919–22 and no better selection could have been made. Every university man and every man who seeks to be a university man should read the book.

CONTRACEPTION (BIRTH CONTROL): ITS THEORY, HISTORY, AND PRACTICE.

A Manual for the Medical and Legal Professions. By MARIE CARMICHAEL STOPES, D.Sc. Lond., Ph.D. Munich, Fellow of University College, London. London: John Bale, Sons and Danielsson. 1923. Pp. 417. 12*s.* 6*d.*

Dr. Stopes tells us in her preface that this book represents the arduous toil of four years; in it she has endeavoured to set out clearly all that is valuable of available knowledge on contraception, hoping thus to have cleared the way for the initiation of deeper researches as well as for the determination of the best practical means of contraception to suit specific cases. In the 14 chapters which follow Dr. Stopes sets out with precision and no little literary grace the problem of contraception as she sees it, the indications for its use, a description of contr aceptives desirable and undesirable, answers to some objections which have been raised, the history of its practice in this and other countries, and a note on the need for instruction in medical schools. Finally, she describes the daily practice of the birth control clinic inaugurated by her in Holloway. The parents visiting this clinic are, Dr. Stopes tells us, made to feel that they come not to talk about disease, nor to be subjected to operation, but "to discuss in an inspiring way in attractive surroundings one of the greatest and one of the most racially vital questions which arise in their lives." No letter of introduction is required, no fees are taken. Any mother or father, who desires to do so, can walk into the clinic at any time. The simple and decent procedure is described, and Dr. Stopes adds that few women require a second instruction, although the friendly atmosphere of the clinic and the sympathy of the nurse encourage them to come again if difficulty should arise. Dr. Stopes concludes her book by describing the practice of contraception as "in many ways the connecting link between health and disease." The prime object of the medical profession being the health of the community, she regards a full knowledge of contraception as one of the doctor's most useful adjuncts, for "when used by diseased persons contraception becomes the great preventive measure to arrest the spread of disease and degeneracy through the nation." We find some essential truth in this declaration along with some of the exaggeration which is characteristic of the prophet who believes that a message is entrusted to him or her alone. Just as it is futile to try to promote the general health of the community without an intimate study of the early beginnings of disease or the deviations from normal function, so no doubt the practice of normal healthy sex relations cannot be put on a firm footing without close study.

Much of the evidence contained in the book is quite unobtainable elsewhere, for the author has been the confidante of hosts of marital difficulties. Were it not in fact for the opening pages of the volume the medical reader would feel inclined to accept it as a text-book on a specialty in which the author has made herself proficient. But a feeling of doubt and perplexity is engendered by the extraordinary number of introductions from distinguished medical men and women which precede the opening chapter. Sir William Bayliss first sets out the two chief arguments in favour of birth control, the one being the relief of the mother from the results of frequently repeated pregnancies, the other, like unto it, being the possibility of a normal and beautiful married love—a possibility which, he adds, Dr. Stopes has had the honour of bringing out into a clear light. The records kept at the mother's clinic will, he hopes, in time lead to the accumulation of valuable information so that we may be able presently to recommend the best method in any given case and to issue warning against the use of those likely to be injurious. Sir James Barr approaches the subject from the racial point of view and laughs to scorn the argument that if young women knew the use of contraceptives they would lose any morality which they now possess. The sentimental stuff contained in prurient novels should, he thinks, be replaced by genuine information. The innocence of ignorance is not worth preserving. Dr. Christopher Rolleston testifies to the value of Dr. Stopes's book to the medical officer of the smaller English counties who, unlike his brother in larger cities, comes into intimate clinical contact with his neighbours from their birth (or before) to their death. Dr. Jane Hawthorne adds a brief benediction and a medical barrister-at-law, who signs himself "Obscurus," justly compliments the author on having given references for every quotation she has made, but does her disservice in stating that, had she been on the Medical Register, she might well have been cited before the General Medical Council to answer for her views. Whatever disciplinary terrors the Council may wield, it certainly never questions the right of the thinking men or women whom it registers to hold what views are dictated to them by knowledge or conscience.

NEUROLOGICAL DIAGNOSIS.

Kompendium der topischen Gehirn- und Rückenmarksdiagnostik. By ROBERT BING, Professor in the University of Basel. Fifth enlarged and corrected edition. Berlin and Vienna: Urban and Schwarzenberg. 1922. With 102 illustrations, partly in colour. Pp. 242. M.450.

Dr. Robert Bing's book on neurological diagnosis is well known in this country and has been frequently reviewed in these columns. The latest edition contains various additions and corrections which do not add materially to its length. There are some new diagrams and illustrations, the former characterised by the same simplicity and clearness that have been features of Dr. Bing's diagrams from the outset. Eschewing controversy and speculation, the author confines himself, with singular success, to the anatomy and physiology, normal and pathological, of the nervous system, and if it is impossible for him to avoid some vexed questions—e.g., that of the relation of the corpus striatum to other centres, above and below—his teaching is sufficiently definite to be instructive, even though exception might easily be taken to some of his statements. One or two of the criticisms we offered in a previous review have been met, but there are others which if accepted would, we believe, bring the work even more close to that ideal of neurological doctrine which every teacher desires. The fact that a fifth edition is issued is comment enough on the practical nature of this compendium, which can once more be recommended to all students of the nervous system and its disorders.

TUBERCLE BACILLUS INFECTION AND TUBERCULOSIS IN MAN AND ANIMALS.

By Albert Calmette. Authorised translation by WILLARD B. SOPER, M.D., and GEORGE H. SMITH, Ph.D. Baltimore, U.S.A.: Williams and Wilkins Company. 1923. Pp. 689.

THE original French edition of this valuable book was noticed in THE LANCET (1920, ii., p. 74) on its publication, and though there is little to add to what was then said, it is a pleasure to welcome this authorised English edition. The translators have performed their task admirably, and have added the index which was omitted from the original work, after the regrettable custom of France. They have been ably supported by their publishers and the result is a volume which should be in the library of every student of tuberculosis, whether he works on the clinical side or in the laboratory. Quite apart from the wealth of information it contains, this monograph has a value which it is difficult to overestimate. The author's individuality is stamped on every page, and he has given us not only a brilliant account of the present state of knowledge of tuberculosis, but also a model of what constitutes the best type of scientific work.

HÆMATOLOGY AND HISTOLOGY.

Traité technique d'hématologie, morphologie, histogenèse, histophysiologie, histopathologie. Par J. JOLLY, Directeur du Laboratoire d'Histologie de l'École dés Hautes Etudes au Collège de France. Paris: A. Maloine et Fils. 1923. With 69 figures in the text and one coloured plate. Two vols. Pp. 1130. Fr.70.

THE author holds that all sound biological work must rest upon a basis of morphology and histology, and he has furnished the proof of his doctrine, if any proof is necessary, in this exhaustive treatise. It is essentially a monograph on the structure of the cellular elements of the blood, but Mr. Jolly loses no opportunity of pointing out how function depends on structure, and how the one varies with the other. The book is planned on the broadest possible lines. The first few pages contain instructions how to obtain blood from animals, birds, fishes, and reptiles, and though naturally man is the chief subject of observation, the author never hesitates to refer to lower orders of life when necessary. Though the morphology and the quantitative variations of the cells of the circulating blood, including, we may note, the platelets, are treated of in detail, this aspect of the question forms only a part, and not the greater part, of the book. The wandering cells of the tissues in normal and pathological states are described at length; and there are equally comprehensive chapters dealing with the structure of lymphadenoid tissue, the spleen, the bone-marrow, and the thymus. There are chapters on hæmoglobin, the coagulation of the blood, hæmolysis, and histogenesis. The last chapter on the relations of the blood with the body and with the outside world is not the least valuable. Mr. Jolly has written a truly philosophical treatise on an intensely interesting subject. If we have omitted to mention that there are chapters dealing with the anæmias and the leukæmias it is because these abnormal states are put in their proper place; they exist, and they are faithfully dealt with, but for Mr. Jolly the study of the blood means much more than it does to most medical authors. The illustrations are adequate, and the format of these paper-bound volumes leaves nothing to be desired.

VENTILATION.

The Ventilation of Public Buildings. By ROBERT BOYLE. London: Robert Boyle and Son. 1923. Pp. 51. 6*s*.

THIS very short book contains a compilation of statements by various individuals in favour of the natural system of ventilation. There is little general information on ventilation, the object apparently being to advertise the fact that the consensus of opinion in this country is in favour of the natural system of ventilation and opposed to all artificial systems. The book is illustrated.

Calculations in Heating and Ventilation. By G. S. COLEMAN, D.Sc., Assoc.M.Inst.C.E., Director of the Department of Municipal and Sanitary Engineering in the Municipal College of Technology, Manchester. London: Longmans, Green and Co. 1923. Pp. 249. 15*s*.

THE main object of this excellent book is to provide working examples for students taking the second and third years in the advanced course in heating and ventilating engineering at the Municipal College of Technology, Manchester. The author claims no originality and expresses his debt to the more comprehensive and standard works. In addition to the chapters on calculations, there are chapters on mechanics and physics, conveniently placed for reference, and a means of saving the student much time. The book contains instructive illustrations, tables, and charts, and also much technical information in a readable form. More space could have been allotted with advantage to the kata-thermometer, an instrument which has now proved its value in many countries.

DELAFIELD AND PRUDDEN'S TEXT-BOOK OF PATHOLOGY.

Twelfth edition. Revised by FRANCES CARTER WOOD, M.D., Director of the Pathological Department, St. Luke's Hospital, New York; Director of the Institute of Cancer Research, Columbia University, New York. New York: William Wood and Co. 1922. Pp. 1354. 63*s*.

THE twelfth edition of this excellent text-book differs little from the previous one published in 1920, though it has been subjected to a careful and detailed revision. The sections on the liver and the central nervous system contain a good deal of new matter and are improved by additional and useful illustrations; and portions of the section on tumours have been rewritten. By careful pruning the author has succeeded in effecting these changes without increasing the size of the book, which remains one of the most satisfactory examples of its kind.

A SURGICAL ATLAS.

Spezielle Chirurgie. Part II. Second edition. By Prof. G. SULTAN. München: J. F. Lehmann. 1923. Pp. 576. 14*s*. 5*d*.

THIS is a revised edition of a well-known surgical atlas. The illustrations do not differ very much from those which appeared in the former edition, but the letterpress has been considerably altered. Certain illustrations and descriptions might well have been omitted, such as Kocher's method for the radical cure of hernia, and possibly, too, the technique of the use of Murphy's button, which now is only of historical interest. There are some rare conditions depicted which one very seldom meets. The atlas is a collection of extremely good pictures which really help the student to visualise disease which he may not have had an opportunity of seeing.

DISEASES OF SALIVARY GLANDS AND PANCREAS.

Nouveau traité de médecine. Vol. XV. *Glandes salivaires, pancréas, et péritoine.* Edited by G. H. ROGER, FERNAND WIDAL, and P. J. TEISSIER. Paris: Masson et Cie. 1923. Pp. 568. Fr. 40.

THE fifteenth volume of this System of Medicine bears the same signs of scholarship and scrupulous preparation that we have observed in earlier volumes. Dr. E. Parmentier and Dr. Etienne Charbrol are responsible for the section dealing with the salivary glands and the pancreas. We have been particularly impressed by their excellent discussion of the pathology of diabetes. In reading this article on page 80, with its cold and logical exposition of the arguments for and against the pancreatic theory, one feels the enormous importance of the work of F. G. Banting and how sensibly future progress in pathology must be modified by this new knowledge. The problems of pancreatitis are no less ably dealt with, this section being, like others, enriched by collections of statistics which are of great value. The major portion of the last section of the volume, which deals with diseases of the peritoneum, is by Dr. Paul Londe, and is marked by the same scrupulous care. We have no hesitation in recommending this as an admirable reference work.

JOURNALS.

TROPICAL DISEASES BULLETIN. July, 1923.—An instructive feature of the July number of the *Tropical Diseases Bulletin* is the critical review, by C. M. Wenyon, of the bodies in the blood which have, from time to time, been described as "hæmogregarines" of man.—Clayton Lane contributes a number of reviews on malaria, while C. M. Wenyon is responsible for the sections dealing with kala-azar, relapsing fever, infectious jaundice, and yellow fever.—Novel laboratory methods are summarised by J. D. Thomson, and under the miscellaneous category subjects such as psychoses and rabies are dealt with.

THE MEDICAL REGISTER: UNTRACEABLE PRACTITIONERS, H TO O.

WE are requested by the Registrar of the General Medical Council to publish the following list of medical practitioners who have not replied to his inquiries as to the accuracy of their addresses. The list includes all untraceable names from H to O in the body of the Medical Register, as it is only this section which has come under review this year. Anyone who finds his or her name included in this list should communicate immediately with the Registrar of the General Medical Council, 44, Hallam-street, Portland-place, London, W. 1. Since this list was prepared a large number of further inquiries have been sent out, but it would be advisable that in all cases in which a practitioner's name appears in the list a communication should be addressed to the Registrar.

Hackett, Henry W., L., L.M.R.C.P. 1917 (I).
Haigh, William E., M.R.C.S. 1909 (E).
Halahan, Samuel H., M.B. 1885 (I).
Hall, Alexander R., M.R.C.S. 1902 (E).
Hall, Thomas Gibson H., L.R.C.S. 1883 (I).
Hall, Thomas Greenwood, M.B. 1891 (E).
Hallam, Walter, M.R.C.S. 1874 (E).
Hamilton, Archibald A., M.B. 1880 (I).
Hamilton, Chas. K. J., M.B. 1920 (E).
Hamilton, Jas. A. G., M.B. 1876 (I).
Hamilton, Percy D., M.R.C.S. 1912 (E).
Hamilton, Reginald H., L.M.K.Q.C.P. 1889 (E).
Hamilton, Roger K., M.R.C.S. 1896 (E).
Hamilton, Seton Guthrie, M.R.C.S. 1879 (E).
Hance, James B., *O.B.E.*, M.R.C.S. 1911 (E).
Hanly, Edward, M.D. 1879 (I).
Hanly, John Joseph, L.R.C.P. 1884 (E).
Hannen, John J., M.R.C.S. 1885 (E).
Hannigan, Charles Ignatius, M.B. 1914 (I).
Hannigan, Francis, L., L.M.R.C.P. 1912 (I).
Hanson, Reginald J. E., *O.B.E.*, M.B. 1896 (E).
Hanwell, Gerald L., M.R.C.S. 1896 (E).
Hardy, George F., *M.C.*, M.R.C.S. 1905 (E).
Harper, Rodolphus W., M.B. 1905 (I).
Harris, Edward Temple, *D.S.O.*, B.C. 1903 (E).
Harris, Matthew H., M.B. 1903 (E).
Harrison, Herbert M., M.R.C.S. 1895 (E).
Harrison, Howard D., M.R.C.S. 1912 (E).
Harrison, Richard, L.R.C.P. 1884 (E).
Harrison, Thomas, L.R.C.P. 1909 (E).
Hart, Charles Herbert, M.R.C.S. 1911 (E).
Hartgill, Wm. C., *M.C.*, M.R.C.S. 1914 (E).
Harvey, Frederick George, M.R.C.S. 1875 (E).
Haslam, Sarah Kate K., L.S.A. 1901 (E).
Hastings, John P., M.R.C.S. 1907 (E).
Hatherly, Henry R., M.R.C.S. 1864 (E).
Haughton, Wm. S., M.B. 1894 (I).
Haw, Walter H., M.R.C.S. 1884 (E).
Hawker, Walter, L.S.A. 1891 (E).
Hawkins, Charles Thomas, M.R.C.S. 1908 (E).
Hawks, Francis S., L.M.S.S.A. 1908 (E).
Hayden, Richard H. H., L., L.M.R.C.P. 1892 (I).
Hayes, Richard F., L., L.M.R.C.P. 1905 (I).
Hayes, Wm. B., M.D. 1886 (I).
Hayne, Percy A., M.R.C.S. 1902 (E).
Haysom, Nathan N., M.R.C.S. 1916 (E).
Hayward, John W., M.R.C.S. 1864 (E).
Head, Ernest Edward, M.R.C.S. 1895 (E).
Head, Percy T. J., L.S.A. 1876 (E).
Healy, Denis, M.B. 1921 (I).
Hearn, Douglas E., L.M.S.S.A. 1917 (E).
Hebbert, Charles A., M.R.C.S. 1880 (E).
Heberden, Wm. S., M.R.C.S. 1889 (E).
Heeland, Patrick A., L.R.C.S. 1885 (I).
Hegarty, Andrew, M.D. 1868 (I).
Hegarty, Patrick N., L., L.M.R.C.P. 1919 (I).
Hennessy, Cornelius, L., L.M.R.C.P. 1918 (I).
Hennessy, Thomas, L., L.M.R.C.P. 1894 (I).
Henry, Edwin, M.R.C.S. 1892 (E).
Henry, John R., M.B. 1913 (I).
Henry, Louis, L.R.C.P. 1878 (E).
Hepburn, John, L.S.A. 1880 (E).
Hepper, Evelyn C., M.R.C.S. 1900 (E).
Herring, Edward K., M.R.C.S. 1896 (E).
Heslop, William J., L.M.K.Q.C.P. 1877 (E).
Hetherington, Charles E., M.B. 1870 (I).
Heywood, Thomas, M.R.C.S. 1892 (E).
Hickey, Augustus J., *M.C.*, M.R.C.S. 1910 (E).
Hickey, Patrick C., M.D. 1879 (I).
Higgins, George H., M.R.C.S. 1876 (E).
Hill, John S., M.B. 1883 (E).
Hill, John T., L., L.M.R.C.P. 1912 (I).
Hill, Richard A. P., M.R.C.S. 1906 (E).
Hindle, Francis Joseph, L.R.C.P. 1880 (E).
Hislop, Walter J. H., M.B. 1896 (E).
Ho, Shai C., L.M.S.S.A. 1918 (E).
Hodder Williams, F. G., M.B. 1908 (E).
Hodgins, Emerson Le R., M.R.C.S. 1907 (E).
Hogg, Charles A., M.B. 1893 (E).
Holden, Frank N., L., L.M.R.C.P. 1908 (I).
Holland, Edward, M.B. 1921 (I).
Holland, James F. R., M.D. 1879 (E).
Holland, James K., L., L.M.R.C.P. 1917 (I).
Holmes, Arthur N., M.B. 1901 (I).
Holmes, John, M.R.C.S. 1897 (E).
Hood, James C., M.D. 1883 (I).
Hooper, Ebenezer, L.S.A. 1886 (E).
Hooper, Henry Walpole, M.R.C.S. 1883 (E).
Hope, Edward C., M.R.C.S. 1896 (E).
Hopkins, John, M.R.C.S. 1869 (E).
Horan, John W., M.B. 1915 (I).
Hosford, John S., M.R.C.S. 1895 (E).
Hounsell, F. C. W., M.R.C.S. 1886 (E).
Howard, Robert N., M.R.C.S. 1880 (E).
Howden, Patrick F., L.S.A. 1905 (E).
Howson, Frank, M.R.C.S. 1910 (E).
Hoysted, L. N., M.R.C.S. 1887 (E).
Hoyte, S., M.R.C.S. 1910 (E).
Hoyten, W. J., M.R.C.S. 1894 (E).
Hughes, Hugh L., L.S.A. 1886 (E).
Hughes, Wilfrid K., M.R.C.S. 1890 (E).
Hull, Walter, M.R.C.S. 1882 (E).
Humphreys, Miss L. N., M.B. 1920 (I).
Humphry, Ernest, L.S.A. 1884 (E).
Hungerford, L. M. T., L., L.M.R.C.P. 1889 (I).
Huntley, Miss E. A., L.R.C.P. 1887 (E).
Hutchinson, C. G., L.K.Q.C.P. 1885 (E).
Hutton, John, M.R.C.S. 1887 (E).
Hyde, Edwin, M.R.C.S. 1902 (E).
Hynes, A. M., M.R.C.S. 1873 (E).

Iddon, T. W., M.R.C.S. 1887 (E).
Ironside, Miss C. M., *M.B.E.*, M.B. 1903 (E).
Irwin, Miss M. E., M.B. 1918 (I).
Island, Robert L., L.K.Q.C.P. 1886 (I).

Jackson, George H., M.R.C.S. 1878 (E).
Jackson, Harold E. A., M.R.C.S. 1901 (E).
Jackson, Herbert V., M.R.C.S. 1920 (E).
Jacques, Harold, L.S.A. 1903 (E).
Jakins, Wm. V., M.R.C.S. 1858 (E).
James, Walter E., M.R.C.S. 1890 (E).
Jameson, G. B., M.R.C.S. 1913 (E).
Jarrett, M. L., M.R.C.S. 1874 (E).
Jarvis, J. H. E., M.R.C.S. 1887 (E).
Jenkins, Arthur W., M.R.C.S. 1894 (E).
Jenkins, N. R., M.R.C.S. 1917 (E).
Jeppe, T. J. J., M.R.C.S. 1913 (E).
Johnson, Frederick, M.R.C.S. 1891 (E).
Johnson, J. B., L.S.A. 1881 (E).
Johnson, Reginald, M.B. 1912 (I).
Johnston, George D., M.R.C.S. 1883 (E).
Johnston, H. S., L.M.R.C.P. 1908 (I).
Johnston, James P., L.M.R.C.P. 1910 (I).
Johnstone, J. G., M.R.C.S. 1921 (E).
Jones, E. A., M.R.C.S. 1902 (E).
Jones, F. W., M.R.C.S. 1904 (E).
Jones, G. B. M., M.R.C.S. 1886 (E).
Jones, John, M.R.C.S. 1904 (E).
Jones, R. T., L.R.C.P. 1893 (E).
Jones, T. S., M.R.C.S. 1885 (E).
Joseph, G. W., L.K.Q.C.P. 1873 (E).
Joule, John, L.S.A. 1892 (E).
Joy, H. R. L., M.B. 1896 (I).
Joyce, T., M.R.C.S. 1858 (E).
Joynt, H. W., L.Med., L.S. 1870 (I).
Judah, N. J., M.B. 1911 (E).
Judd, C. F., M.B. 1913 (I).
Juett, A., M.B. 1913 (E).
Jurriaanse, A., L.S.A. 1903 (E).

Kaka, S. M., M.R.C.S. 1885 (E).
Kamchorn, N., M.R.C.S. 1917 (E).
Kan, T. L., M.R.C.S. 1916 (E).
Kapo, S., M.B. 1912 (E).
Kapur, K. L., M.B. 1912 (E).
Kauffmann, O. J., M.R.C.S. 1885 (E).
Kay, H. W. A., L.M.R.C.P. 1908 (I).
Kaye, W. H., M.R.C.S. 1904 (E).
Kean, Edmund, M.B. 1916 (I).
Keats, B. A., L.M.S.S.A. 1909 (E).
Keegan, J. M., M.B. 1890 (I).
Keese, Arthur, L.R.C.P. 1882 (E).
Kelly, C. I., L.S.A. 1891 (E).
Kelly, I. P., M.B. 1911 (I).
Kelly, J. B., L.M.R.C.P. 1907 (I).
Kelly, Thomas, L.M.R.C.P. 1904 (I).
Kelly, Thomas, M.B. 1916 (I).
Kelly, T. J., L.Med. 1872 (I).
Kelly, T. J. B., L.M.R.C.P. 1905 (I).
Kelly, William, M.R.C.S. 1872 (E).
Kelman, G. A. E., M.R.C.S. 1911 (E).
Kendall, N. E., M.R.C.S. 1915 (E).
Kendle, F. W., M.R.C.S. 1884 (E).
Kenna, P. J., M.B. 1888 (E).
Kennedy, J. S., M.R.C.S. 1915 (E).
Kennedy, O. E., M.R.C.S. 1920 (E).
Kennedy, Patrick, L.R.C.S. 1873 (I).
Kerans, Robert, L.R.C.S. 1863 (I).
Kerr, C. D., M.B. 1911 (E).
Kerr, T. B., M.B. 1896 (I).
Kerrigan, O. P., L.R.C.P. 1880 (I).
Kerruish, Miss F. M., M.R.C.S. 1918 (E).
Kerswill, J. B., M.R.C.S. 1865 (E).
Keys, S. H., M.R.C.S. 1914 (E).
Khan, M. A., M.R.C.S. 1889 (E).
Kiernan, P. J., L.R.C.S. 1884 (I).
Kilgarriff, J. O., M.B. 1889 (I).
Kincaid, F., M.R.C.S. 1902 (E).
King, F. W. R. J., M.R.C.S. 1890 (E).
King, G. W., M.R.C.S. 1914 (E).
King, T. W., M.D. 1862 (E).
Kinsella, J. J., M.B. 1897 (I).
Klein, B. G., M.B. 1908 (E).
Knaggs, S. T., L.K.Q.C.P. 1870 (I).
Knapp, Arthur E., L.Med., L.S. 1907 (I).
Knight, W. J. R., *M.C.*, M.D. 1881 (I).
Knocker, W. D., M.R.C.S. 1895 (E).
Knott, M. O., L.R.C.S. 1863 (I).
Knox, C. F., M.R.C.S. 1874 (E).
Koch, J. A., L.M.S.S.A. 1909 (E).
Kochhar, M. R., L.R.C.P. 1911 (E).

Labiebe, K. M., M.B. 1914 (E).
Lamb, H. T., *M.C.*, L.M.S.S.A. 1916 (E).
Land, Mrs. D. E., L.R.C.P. 1910 (E).
Lane, C. A., M.R.C.S. 1893 (E).
Lane, James, L.M.R.C.S. 1882 (I).
Lane, J. S., L.M.R.C.P. 1901 (I).
Lane, W. F., L.M.R.C.P. 1909 (I).
Langley, J. T., M.R.C.S. 1865 (E).
Langston, T., M.R.C.S. 1863 (E).
Lanyon, E. T., M.R.C.S. 1896 (E).
Larche, J. E., M.B. 1915 (E).
Larsen, Miss C., M.B. 1912 (E).
Latimer, G. D., M.B. 1913 (I).
La Touche, E. D., L.R.C.S. 1884 (I).
Lauder, J. L., *D.S.O.*, *M.C.*, M.R.C.S. 1913 (E).
Lawrence, A. A. H., M.R.C.S. 1905 (E).
Lawson, E. F., M.B. 1911 (I).
Lea, J. A., L.R.C.P. 1870 (E).
Le Bas, Dumaresq, M.R.C.S. 1903 (E).
Leech, J. R., M.D. 1872 (I).
Leeder, F. B., M.R.C.S. 1891 (E).
Leeper, B. C. A., L., L.M.R.C.P. 1907 (I).
Lehmann, Mrs. H. B. A., L., L.M.R.C.P. 1881 (E).
Lennon, John, M.B., 1896 (I).
Leonard, Miss E., L.R.C.P. 1902 (E).
Leonard, Napoleon, M.R.C.S. 1902 (E).
Lester, F. H., B.C. 1909 (E).
Lethbridge, C. F., M.R.C.S. 1865 (E).
Lever, J. M., M.B. 1917 (E).
Leviscur, H. J., M.R.C.S. 1918 (E).
Levy, O. L., M.R.C.S. 1895 (E).
Lewellin, A. J. R., L.K.Q.C.P. 1879 (E).
Lewin, Miss J. A., M.B. 1904 (E).
Lewis, F. W., M.R.C.S. 1894 (E).
Lewis, Stanley, M.B. 1891 (E).
Lewis, T. P., M.R.C.S. 1876 (E).
Leyland, P. F. J., L., L.M.R.C.P. 1906 (I).
Libby, H. S., M.R.C.S. 1900 (E).
Liebson, S. A., M.R.C.S. 1915 (E).
Lilley, J. H., M.B. 1884 (E).
Lillies, H., M.R.C.S. 1879 (E).
Lindesay, V. E. B., M.B. 1893 (E).
Lindsay, E. A., M.R.C.S. 1908 (E).
Lindsay, F. W., L.R.C.P. 1870 (I).
Link, O. C., M.B. 1914 (E).
Lishman, R. R., M.B. 1914 (E).
Litchfield, E. M., M.R.C.S. 1915 (E).
Little, J. H., M.B. 1871 (E).

Lloyd, H. C., M.B. 1893 (I).
Lloyd, J., M.B. 1889 (E).
Locke, T. W. S., M.R.C.S. 1855 (E).
Lodge, Miss H., M.B. 1921 (E).
Loftus, M. J., L.R.C.P. & S. 1915 (I).
Logan, Miss M. E. M., L.R.C.P. & S. 1902 (I).
Loganadan, A. D., M.R.C.S. 1916 (E).
London, J. E., M.R.C.S. 1883 (E).
Long, Mrs. N., M.B. 1913 (E).
Longson, F. M., M.B. 1905 (E).
Loudon, John, M.B. 1912 (E).
Loughran, D. J., M.B. 1920 (I).
Lovegrove, Charles, M.R.C.S. 1859 (E).
Lovegrove, Charles, L.R.C.P. 1881 (E).
Lowe, C. H., M.R.C.S. 1873 (E).
Lowe, P. R., *O.B.E.*, L.S.A. 1896 (E).
Lowne, B. T., M.R.C.S. 1861 (E).
Lubbe, W. P., M.B. 1917 (I).
Lubeck, W. J., M.R.C.S. 1896 (E).
Lucas, R. H., *O.B.E.*, *M.C.*, M.R.C.S. 1913 (E).
Luffman, W. C., L.R.F.P.S. 1873 (E).
Lush, J. S., L.S.A. 1875 (E).
Lyden, M. A., L.R.C.P. 1881 (I).
Lyle, C. C. V., L.R.C.P. 1886 (E).
Lynch, J. A., M.B. 1916 (I).
Lynch, Stephen F., M.R.C.S. 1897 (E).
Lynch, W. W., M.R.C.S. 1901 (E).
Lyne, C. V. N., M.R.C.S. 1914 (E).

Maaz, M. F., M.R.C.S. 1910 (E).
Macabe, J. J., M.B. 1918 (I).
McAleer, James, L.R.C.P. & S. 1919 (I).
MacAlevey, G. E., *M.C.*, M.R.C.S. 1918 (E).
MacAlevey, W. C., L.R.C.P. 1877 (E).
McAlister, H. C., M.R.C.S. 1918 (E).
McArthur, A. N., M.R.C.S. 1895 (E).
McAuley, J. H., L.R.C.P. & S. 1884 (I).
McBurney, J. H., M.B. 1895 (I).
MacCabe, F. F., M.B. 1894 (I).
McCabe-Dallas, D. C., L.R.C.P. & S. 1907 (E).
McCarthy, C. W., L.R.C.S. 1872 (I).
McCarthy, Henry, L.R.C.S. 1889 (I).
MacCarthy, Philip, L.R.C.P. & S. 1908 (I).
MacCarthy, Randal, L.R.C.P. & S. 1892 (I).
MacCarvill, Patrick, M.B. 1917 (I).
McCausland, J. E., M.B. 1908 (I).
McCausland, S. R., L.R.C.P. & S. 1901 (I).
McCleland, H. A., M.R.C.S. 1893 (E).
McCombe, John, M.R.C.S. 1901 (E).
McConkey, J. T., L.R.C.P. & S. 1915 (I).
McCormack, W. J., L.R.C.P. & S., 1906 (I).
McCullagh, C. H. W., M.B. 1897 (I).
McCullagh, J. T., M.B. 1914 (I).
McCulloch, Miss E. E., M.R.C.S. 1921 (E).
McDermott, Bryen, M.R.C.S. 1912 (E).
McDonagh, G. R., L.R.C.P. 1877 (E).
McDonagh, J. M., L.R.C.S. 1882 (E).
McDonagh, J. E., M.B. 1921 (I).
McDonald, Edward, M.B. 1897 (I).
McDonald, T. S., M.B. 1917 (I).
MacDonell, James A., M.B. 1882 (E).
McDonnell, Charles, L.R.C.P. & S. 1913 (I).
MacDonnell, Henry C. B., L.R.C.S. 1860 (I).
McDonnell, Joseph, L.R.C.P. & S. 1864 (I).
McDonnell, N. J., M.D. 1884 (I).
McDonnell, P. M., M.B. 1920 (I).
MacDonogh, J. D., L.R.C.S. 1885 (E).
McDonough, P. H., L.R.C.P. & S. 1912 (I).
McDougall, Richard, M.B. 1873 (E).
McDougall, Wm., M.B. 1897 (E).
McDowell, S. E. C., L.R.C.P. 1886 (E).
McElwee, Daniel, M.B. 1920 (I).
McEnery, W. A., M.R.C.S. 1900 (E).
McEntire, R. G. J., M.B. 1912 (I).
McEvedy, P. F., M.R.C.S. 1906 (E).
McGann, Michael, L.R.C.P. & S. 1893 (E).
McGettigan, John, M.B. 1917 (I).
McGuire, Miss Alice, M.B. 1921 (I).
McGuire, Michael, M.B. 1911 (I).
McGuire, W. G., L.R.C.P. & S. 1911 (I).
McGurk, D. J., M.B. 1919 (I).
McHale, P. J., L.R.C.P. & S. 1895 (I).
McIlroy, P. T., M.R.C.S. 1920 (E).
Mackay, Henry, M.B. 1889 (E).
McKay, James, *M.C.*, M.B. 1915 (I).
McKee, J. T., L.R.C.P. & S. 1910 (I).
McKee, J. W., M.B. 1917 (I).
McKee, William, M.B. 1907 (I).
Macken, Hubert, M.B. 1918 (I).
McKendry, T. T., M.B. 1894 (E).
McKenna, Miss M. C., M.B. 1914 (I).
McKenzie, Archibald, M.B. 1883 (E).
Mackenzie, F. M., M.R.C.S. 1866 (E).
MacKenzie, J. R. M., *M.C.*, M.B. 1916 (I).
MacKenzie, W. G., L.R.C.P. & S. 1877 (I).
Mackew, Samuel, M.B. 1881 (E).
Maclachlan, R. C., M.B. 1900 (E).
MacLaughlin, C. M., M.B. 1888 (I).
MacLean, C. M., M.R.C.S. 1906 (E).
McLean, W. W. L., L.S.A. 1886 (E).
MacLeod, A. D., L.R.C.S. 1886 (I).
McLeod, T. H., M.R.C.S. 1917 (E).
MacLoughlin, T. J., L.R.C.P. & S. 1878 (E).
MacMahon, A. D., M.B. 1911 (I).
MacMahon, F. I., L.A.H. 1919 (I).
McManus, George, L.R.C.P. & S. 1869 (I).
McMullen, John, M.B. 1893 (I).
McMurray, Wahab, M.D. 1881 (I).
Macnamara, D. W., M.B. 1918 (I).
Macnamara, G. F., L.A.H. 1884 (I).
Macnamara, G. U., L.R.C.S. 1871 (I).
Macnamara, Matthew, L.R.C.S. 1883 (I).
McNaughton, Mrs. M. H., M.B. 1899 (E).
Macrae, Donald, M.R.C.S. 1908 (E).
McReddie, P. G., M.B. 1891 (E).
McRitchie, Philip, M.R.C.S. 1913 (E).
MacSweeney, J. A., L.R.C.P. & S. 1917 (I).
Madden, J. A., M.B. 1919 (I).
Madders, George, L.A.H. 1885 (I).
Madill, D. G., M.B. 1908 (I).
Maguire, Charles, M.B. 1920 (I).
Maguire, Daniel, L.F.P.S. 1876 (I).
Maguire, Joseph, L.R.C.S. 1886 (I).
Maguire, Stanislaus, L.R.C.S. 1876 (I).
Maguire, T. J. R., M.B. 1912 (I).
Major, H. M., M.R.C.S. 1903 (E).
Makar, Naguib, M.R.C.S. 1920 (E).
Makhijani, G. T., L.R.C.P. & S. 1915 (E).
Malaher, Bruce, L.R.C.P. & S. 1913 (I).
Malcolm-Gasper, R. J. T., L.R.C.P. & S. 1916 (E).
Malik, L. A., M.R.C.S. 1916 (E).
Malkani, S. S., M.R.C.S. 1916 (E).
Mallinick, Samuel, M.R.C.S. 1915 (E).
Mangan, Bartholomew, M.D. 1883 (I).
Mankar, B. S., L.S.A. 1897 (E).
Manker, V. L., L.R.C.P. & S. 1898 (E).
Manuel, Alexander, M.R.C.S. 1905 (E).
Marrack, G. C., M.R.C.S. 1898 (E).
Marriott, H. T., L.R.C.P. 1886 (E).
Marriott, Miss Phyllis, M.B. 1917 (E).
Marry, L. J. A., L.S.A. 1902 (E).
Marshall, F. E., L.S.A. 1896 (E).
Marshall, Joseph, M.B. 1876 (I).
Martin, H. P., M.R.C.S. 1905 (E).
Martin, J. H., M.B. 1900 (E).
Martin, J. M., M.R.C.S. 1899 (E).
Martyn, Ernest, M.B. 1881 (E).
Martyn, George, L.S.A. 1892 (E).
Mascarenhas, L. C., L.R.C.P. & S. 1912 (E).
Mason, H. W., L.A.H. 1902 (I).
Mason, R. P. S., *M.C.*, M.R.C.S. 1915 (E).
Massey, David, L.R.C.P. & S. 1898 (I).
Mathew, C. P., M.R.C.S. 1883 (E).
Mathews, F. W., L.R.C.P. & S. 1908 (I).
Mathews, V. G., L.A.H. 1908 (I).
Mathie, J. P., L.R.C.P. & S. 1916 (E).
Mathur, K. P., M.R.C.S. 1911 (E).
Mattei, Charles, L.R.C.P. & S. 1898 (E).
Matthai, P. M., L.R.C.P. & S. 1897 (E).
Matthews, T. M., L.R.C.P. & S. 1920 (I).
Maudsley, Henry, C.M.G., M.R.C.S. 1880 (E).
Maunsell, H. E., M.B., 1867 (I).
May, W. J., L.M.S.S.A. 1916 (E).
Mayberry, F. G., M.B. 1870 (I).
Maye, John, M.R.C.S. 1882 (E).
Mayer, C. A. L., M.B. 1906 (E).
Mayer, W. L., M.R.C.S. 1871 (E).
Meade, Edward, M.R.C.S. 1861 (I).
Meaden, C. A., M.R.C.S. 1909 (E).
Mellor, Thomas, L.S.A. 1878 (E).
Mellotte, J. H., M.B. 1920 (I).
Menage, L. M. J., M.R.C.S. 1913 (E).
Menon, A. V. R., M.R.C.S. 1919 (E).
Mensa Annan, Tete, M.R.C.S. 1920 (E).
Merrifield, S. S., M.R.C.S. 1883 (E).
Michell, Henry S., M.R.C.S. 1876 (E).
Michod, F. A. H., M.R.C.S. 1897 (E).
Miller, D. J., M.D. 1909 (I).
Miller, E. J., L.S.A. 1902 (E).
Mills, F. A., M.B. 1898 (E).
Milner, C. W., M.R.C.S. 1893 (E).
Milner, W. A., M.R.C.S. 1906 (E).
Milton, A. R. O., M.R.C.S. 1892 (E).
Mistri, K. H., L.R.C.S. 1878 (E).
Mitchell, Edward, L.R.C.P. & S. 1920 (I).
Mitchell, J. T., M.B. 1879 (E).
Mitchell, John, L.R.C.P. & S. 1910 (I).
Mitra, Asutosh, L.R.C.P. & S. 1883 (E).
Mitra, B. M., M.R.C.S. 1914 (E).
Mittra, Dhanaindranatha, L.R.C.P. & S. 1899 (E).
Moftah, S. G., M.R.C.S. 1915 (E).
Molesworth, R. E., M.R.C.S. 1884 (E).
Molina, Ferdinand, M.R.C.S. 1915 (E).
Monckton, F. A., M.R.C.S. 1857 (E).
Monckton, H. H., L.S.A. 1897 (E).
Montgomery, Edward, M.B. 1891 (I).
Montgomery, H. H., L.R.C.P. & S. 1910 (I).
Moore, Alfred, M.B. 1892 (I).
Moore, A. R., L.R.C.P. & S. 1892 (I).
Moore, D. G. F., M.R.C.S. 1920 (E).
Moore, F. J., L.R.C.P. & S. 1902 (I).
Moore, G. S., L.S.A. 1899 (E).
Moore, H. E., M.B. 1904 (E).
Moore, J. B., L.K.Q.C.P. 1887 (I).
Moore, J. P., M.B. 1909 (I).
Moore, Walter, M.R.C.S. 1866 (E).
Moorhouse, B. M., M.B. 1883 (E).
Moran, T. F., L.R.C.P. & S. 1915 (I).
Moray-Lawrence, Miss J. M., M.B. 1909 (E).
Moreton, Frederick, M.R.C.S. 1894 (E).
Moreton, J. S., M.R.C.S. 1882 (E).
Morgan, C. P., L.S.A. 1891 (E).
Morgan, D. L., M.R.C.S. 1901 (E).
Morgan, H. L., M.R.C.S. 1907 (E).
Morgan, Mrs. M. E., M.B. 1913 (E).
Morgan, Thomas, M.R.C.S. 1902 (E).
Morley, Arthur, L.R.C.P. & S. 1885 (E).
Morrell, C. C., L.S.A. 1907 (E).
Morrin, F. J., M.B. 1915 (I).
Morris, E. W., M.R.C.S. 1887 (E).
Morris, Jonas, M.R.C.S. 1905 (E).
Morrow, Robert, M.B. 1884 (I).
Mortada, Ismail, M.R.C.S. 1915 (E).
Morton, F. W. W., L.R.C.P. & S. 1880 (E).
Moses, O. St. J., M.B. 1896 (E).
Moss, Miss E. M. N., M.B. 1913 (E).
Mosse, C. G. T., M.R.C.S. 1915 (E).
Mostertz, Julius, L.S.A. 1893 (E).
Moxon, A. H., M.R.C.S. 1886 (E).
Mudd, F. B., M.R.C.S. 1897 (E).
Mullins, G. L., M.B. 1887 (I).
Munro, A. W., M.B. 1883 (E).
Murie, James, M.D. 1857 (E).
Murnane, Miss H. M., M.B. 1920 (I).
Murnane, J. I., M.B. 1913 (I).
Murnane, P. J., M.B. 1918 (I).
Murphy, A. E., L.R.C.S. 1886 (I).
Murphy, H. A. J. S., L.Med.L.S. 1900 (I).
Murphy, J. J., M.R.C.S. 1916 (E).
Murphy, L. C. E., L.R.C.P. & S. 1903 (I).
Murphy, Miss M. A., M.B. 1912 (E).
Murphy, P. F., M.B. 1911 (I).
Murray, A. H., L.R.C.S. 1880 (I).
Murray, Cyril, L.R.C.P. & S. 1917 (I).
Murray, Miss J. R., M.B. 1906 (I).
Murray, Joseph, L.R.C.P. & S. 1902 (I).
Murray, Thomas, L.R.C.P. & S. 1910 (I).
Muttu Kumaru, K. V., M.B. 1915 (E).
Myerson, M. C., L.R.C.P. & S. 1918 (I).

Nagle, J. J., M.D. 1885 (I).
Nairn, A. B., L.R.C.P. & S. 1900 (E).
Nankivell, Frank, M.B. 1875 (E).
Naoroji, M. A. D., M.B. 1906 (E).
Nariman, B. K., M.B. 1896 (E).
Naz, J. B. C. O., M.R.C.S. 1899 (E).
Neill, Charles, M.B. 1894 (E).
Neligan, A. R., M.R.C.S. 1903 (E).
Neville, Thomas, L.R.C.P. & S. 1898 (E).
Newman, C. D., M.B. 1920 (E).
Newmark, Solomon, L.R.C.P. & S. 1903 (E).
Nicholls, John M., M.R.C.S. 1880 (E).
Nicholson, Gerald, M.R.C.S. 1881 (E).
Nicholson, John, M.R.C.S. 1862 (E).
Nicol, Wm. P., M.R.C.S. 1896 (E).
Nicol, Wm. Robert, L.S.A. 1891 (E).
Nielsen, Fredk. W., L.S.A. 1885 (E).
Nihill, John E., M.R.C.S. 1886 (E).
Nissim, Edward, M.R.C.S. 1918 (E).
Noad, Ernest, M.R.C.S. 1884 (E).
Nolan, Harold, M.B. 1896 (E).
Nolan, Herbert F., L.R.C.P. & S. 1894 (I).
Noonan, Patrick, L.R.C.P. & S. 1892 (E).
Norman, Cuthbert E. R., L.A.H. 1912 (E).
Norrington, H. L. W., *D.S.O.*, M.R.C.S. 1897 (E).
Norris, Miss Nannette, M.B. 1921 (I).
Nortje, Peter Le F., M.B. 1911 (E).
Nottingham, Wm. A. J., L.S.A. 1885 (E).
Noyes, Alexr. W. F., L.S.A. 1885 (E).
Nuthall, Robert L. S., M.R.C.S. 1890 (E).

Oates, James C., M.R.C.S. 1900 (E).
O'Brien, James V., L.R.C.P. & S. 1915 (I).
O'Brien, Michael F., L.R.C.P. & S. 1918 (I).
O'Brien, Michael J., L.R.C.P. & S. 1894 (I).
O'Carroll, Martin, L.Med.U.Dubl. 1875 (I).
O'Connell, Patrick Joseph, L.R.C.P. & S. 1918 (I).
O'Connor, James, M.B., 1914 (I).
O'Connor, Matthew J., M.B. 1919 (I).
O'Connor, Wm. M. J., M.B. 1914 (I).
O'Donnell, John, M.B., 1892 (I).
O'Donnell, Thomas M., L.R.C.S. 1883 (I).
O'Donoghue, Henry V., L.R.C.P. & S. 1914 (I).
O'Donovan, Daniel, M.R.C.S. 1919 (E).

O'Donovan, Louis J., L.R.C.P. & S. 1912 (I).
O'Donovan, Wm. J., *O.B.E.*, M.R.C.S. 1909 (E).
O'Driscoll, John A., L.R.C.P. & S. 1914 (I).
O'Driscoll, John P., M.B. 1914 (I).
O'Dwyer, Peter, L.R.C.P. & S. 1888 (I).
O'Farrell, Ignatius, L.K.Q.C.P. 1860 (I).
O'Farrell, John W., L.R.C.P. & S. 1908 (I).
O'Flynn, Jerome, M.B. 1913 (I).
O'Grady, John F. G. K., M.B. 1921 (I).
O'Grady, Patrick J., M.B. 1913 (I).
O'Hagan, Charles, M.B. 1914 (E).
O'Halloran, Miss A. M. K., M.B. 1917 (I).
O'Keefe, Edward J., M.B. 1914 (I).
O'Kelly, James J., M.B. 1909 (I).
O'Kelly, John J., L.R.C.P. & S. 1912 (I).
O'Leary, James, L.R.C.P. & S. 1900 (I).
O'Leary, Miss M. M. A., M.B. 1915 (I).
Oliver, A. C., L.S.A. 1901 (E).
Oliver, Charles H., L.R.C.P. & S. 1911 (I).
Olivey, Wm. J., M.R.C.S. 1891 (E).
Olsen, Alfred B., M.R.C.S. 1901 (E).
O'Malley, Michael, M.D. 1868 (I).
Omar, Mustafa A., M.R.C.S. 1916 (E).
O'Meara, Daniel J. P., M.R.C.S. 1920 (E).
O'Meara, Patrick M., M.B. 1897 (I).
O'Neill, John G., M.B. 1878 (I).
O'Neill, Wm., M.B. 1914 (I).
O'Reilly, Miss Alice, M.R.C.S. 1916 (E).
O'Reilly, Arthur E., L.R.C.P. & S. 1900 (I).
O'Reilly, Charles J., *D.S.O.*, *M.C.*, M.B. 1913 (I).
Orford, Miss Florence, L.R.C.P. & S. 1888 (E).
O'Riordan, George E., M.B. 1919 (I).
Ormsby, George H., L.K.Q.C.P. 1869 (I).
Orr, Andrew W., M.B. 1887 (I).
Orr, Frederic L., M.B. 1890 (E).
Osburne, John C., M.B. 1913 (I).
O'Shaughnessy, Michael, L.R.C.P. & S. 1890 (E).
O'Shaughnessy, P. J. B., L.R.C.S. 1878 (I).
O'Sullivan, C. F. X., M.B. 1907 (I).
O'Sullivan, David, L.R.C.P. & S. 1909 (I).
O'Sullivan, Edward F., M.D. 1897 (I).
O'Sullivan, James J., L.R.C.P. & S. 1921 (I).
O'Sullivan, Joseph E., M.B. 1913 (I).
Othman, Ahmed, M.R.C.S. 1920 (E).
Owens, Edward M., M.R.C.S. 1866 (E).
Owens, Henry E., M.B. 1916 (I).

INTERNATIONAL UNIFORMITY IN PHARMACOPŒIAL PREPARATIONS.

SOME NEW SUGGESTIONS.

THE problem of an International Pharmacopœia was discussed at the general assembly of the International Pharmaceutical Federation, which met in London recently at the same time as the British Pharmaceutical Conference.

The subject is not a new one, and we may recall that already, in 1877, at the Fifth International Medical Congress of Geneva, following a report from Dr. Gilles, it was agreed that uniformity both in the nomenclature and the composition of medicaments was highly desirable. A committee was appointed to study the subject and to inquire into the matter of a universal codex which had been prepared by the Société de Pharmacie, of Paris. At the next Congress (Amsterdam, 1879) this committee was enlarged, and it was decided to accept the French draft as a basis and have it published. The French formulary, however, passed through many vicissitudes and was never set in print. In 1881 the Seventh Medical Congress met in London at the same time as the Fifth Pharmaceutical Congress. They had a joint meeting, and after a long discussion two committees were appointed, one by each body, to collaborate and prepare a restricted formulary that would receive general approval. The Pharmaceutical Committee published the result of its labours in 1885 (Sixth Congress, Brussels), but it remained a dead letter.

Once more, at the Moscow Medical Congress of 1897, the question was raised and a proposal put forward to find a Government that would give its support to the undertaking. During the year following the Brussels Academy of Medicine requested the Belgian Government to convene a representative international conference for the purpose of standardising potent galenicals. The conference met in 1902 and yielded the first practical result in the form of an international agreement regulating the strength of some 40 poisonous preparations. Since then very little advance has been made, but the International Pharmaceutical Federation has recently decided to renew the attempts.

Prof. van Itallie (Leiden), in his presidential address to the Federation, remarked that the Brussels agreement, though an excellent beginning, has become antiquated and, like every national pharmacopœia, requires corrections and extension. As President of the Pharmacopœia Committee of Netherlands, he was fully aware of the large amount of work necessary for its revision. He had, therefore, proposed last year that an international secretariat should be entrusted with the task of collecting the data needed for bringing up to date national pharmacopœias, thus promoting uniformity. A committee of chemists, pharmacologists, clinicists, and serologists could afterwards compile an international pharmacopœia of a restricted scope, containing only the more important drugs and their preparations, together with accurate methods of testing. The need for national medicines would still exist, but every country would be free to have its own additional formulæ. In most places we find already side by side an official pharmacopœia and a national formulary.

Dr. J. J. Hofman (Secretary of the I.P.F.) stated that the Belgian Government had been requested to bring together a second international conference in order to discuss the institution of a central pharmacopœial secretariat as outlined by Prof. van Itallie. The Belgian Government had not yet signified its acquiescence, and if it should refuse another Government will have to be approached.

A slightly different proposal was put forward by a group of British pharmacists and analysts, who communicated to the Conference a number of monographs dealing with the international standardisation of pharmacopœial preparations. Mr. V. Cofman, B.Sc., in introducing these papers, explained that they had put aside, for the time being, the ambitious aim of an international pharmacopœia. The immediate aim was to attain uniformity in the case of the really important drugs, so that potent preparations which had a common name in different countries should also have the same composition. The importance of this step was too obvious to need demonstration; everybody was agreed on that point. Of greater importance was the method chosen to attack the problem. In their opinion it was necessary to prepare the ground by collecting in a convenient form the data on which the international conference for unification, when it eventually does meet, will have to base its decisions. A beginning in this field had been made. Each monograph submitted to the Conference dealt exhaustively with a single drug and its preparations giving comparative tables of the formulæ and methods adopted by all existing pharmacopœias, together with criticisms and suggestions as to which appears the most suitable for universal use.

Mr. C. T. Bennett, B.Sc., F.I.C. (Chief Chemist, Wright, Layman and Umney), who had investigated the cinchona preparations and the methods of assay of various pharmacopœias, came to the following conclusions: (1) that the bark should be required to contain 6 to 8 per cent. of total alkaloids; (2) that a liquid extract should be prepared by percolation with 70 per cent. alcohol, hydrochloric acid and glycerine being added to prevent precipitation (its alkaloidal content should be 5 per cent.); (3) a simple tincture (1 per cent. alkaloids) should be prepared with 70 per cent. alcohol.

Mr. H. B. Stevens, O.B.E., F.I.C. (Director, John Bell, Hills and Lucas), dealt in his monograph with the opium preparations, and advised that: (1) in expressing the percentage of alkaloid present the morphine should always be calculated as anhydrous; (2) the extract of opium should contain 20 per cent. of anhydrous morphine, sugar of milk being used as diluent, if necessary; (3) the tincture of opium be made with 45 per cent. alcohol, 70 per cent. being unnecessarily high; (4) the formula for Dover's powder should be: opium 1, ipecac. 1, sugar of milk 8.

Mr. A. J. Jones, Ph.C. (Research Dept., Evans, Lescher and Webb) reviewed the preparations of belladonna, showing the present variations in the formulæ and methods of testing. The author suggests that a soft standardised extract should be retained,

and describes the analytical methods which appear most reliable for determining the activity of the drug.

Messrs. J. Cofman-Nicoresti and S. B. Tallantyre, B.Sc., A.R.C.S. (City Laboratories) gave a survey and critical description of the quillaia preparations, while a study of colchicum galenicals from an international standpoint came from Misses E. Hooper, B.Sc., F.I.C., and K. M. King, Ph.C. (Principals of the School of Pharmacy for Women.)

It was finally recommended that the faculties of medicine and pharmacy of every country should be advised to continue and extend this essential preliminary work, and when all the information needed had been collected the Health Department of the League of Nations should be asked to bring together a conference of those concerned, in order to decide which formulæ and methods are most suitable for universal use. The assembly agreed that the permanent committee should consider the proposal and take the necessary steps accordingly.

New Inventions.

A LAMINECTOMY RETRACTOR.

ONE of the difficulties in performing a laminectomy operation is to obtain adequate retraction of the erector spinæ muscles on each side. If the muscles are peeled away on either side and a self-retaining retractor inserted, an excellent view of the laminæ is obtained,

and troublesome hæmorrhage is avoided. The retractor consists of two stout steel blades with wide base and tapering towards the top. The inner edges of the blades have three curved hooks which are inserted under the erector spinæ muscles when the retractor is closed. The extension of the retractor blades are manipulated by a quick travelling screw revolving in a telescopic steel tube. On rotating a wheel at the opposite end of the tube, the blades will open to 5 inches. I have found the retractor a very useful instrument; the adjustment is good.

Messrs. J. H. Montague, of 69, New Bond-street, London, W., have made the retractor here described to my design.

C. P. G. WAKELEY, F.R.C.S. Eng.

Devonshire-place, W.

INVALID'S BEDSIDE TABLE.

THIS table has been designed to add to the comfort of those patients who are not helpless, but have to spend many hours in bed. The ordinary table soon becomes crowded with the patient's effects, and everything is displayed to anyone entering the room. The table illustrated is in three tiers: the top and two compartments, and in addition there is a sliding shelf which can be pulled across the bed. It takes up less room than the ordinary small table in use for the purpose, and it has the following advantages: The two compartments will hold all the personal belongings, such as books, writing materials, and so on, which any one is likely to need, and these are in sight and control only of the patient, and are always easy to get at. Spit cups, medicine bottles, and so on, are kept out of sight of everyone except the occupant of the bed. The sliding shelf pulls over the bed for meals or for writing upon, and there is no need for bed-tables of any kind.

The table runs on easy castors, and a slight push will place it in any desired position. All corners are rounded. It can be made of any hard wood, and polished so that it forms an attractive feature in a sick-room.

The table is made by Messrs. Allen and Hanburys, Ltd., Wigmore-street, London, W. 1.

A. CAMPBELL STARK, M.B. Lond.

Wanstead Park, E.

EAST SUSSEX HOSPITAL.—On July 23rd Viscount Goschen presided at the annual meeting of the recently opened East Sussex Hospital. In the course of his speech Lord Goschen spoke of the anxiety on his own part and that of his audience to preserve the system of voluntary hospitals, and of the spirit of voluntary service and self-sacrifice which, he was convinced, was needed at the present day perhaps more than ever, and which beside assisting hospitals, would assist the country during times of anxiety and unrest. The greater the advance in hospitals the greater must the expense be, but a business man would look at the return the country was getting for this insurance against a C3 population. Lord Goschen recalled that the foundation-stone of the hospital was laid in 1914, a fortnight before the outbreak of war. The hospital had, however, only just been completed. The annual meeting this year had been delayed to allow of it being held in the new building. The annual report, of course, referred to the work at the old building at White Rock. It showed that the number of in-patients during the year was 1011, and new out-patients (including 1171 casualty cases) 4681. The general income had been well maintained, there being an increase of £483 upon the ordinary income, the total being £13,817. The annual subscriptions showed an increase of £273, the total received from subscribers being £2326. The ordinary expenditure showed a considerable drop; an overdraft at the bank had been liquidated, and the balance sheet showed a deficit of £145 18*s.* 5*d.* The reserve was put at £14,419. The report chronicled the purchase of houses for a nurses' home, the gift of the chairman of the committee, Major W. H. Mullens, J.P. In recording the resignation of Dr. C. Christopherson, senior surgeon, owing to illness, after a period of 29 years' service, the report stated that "It is largely due to his ability, influence, and personality that the East Sussex has obtained its reputation for efficiency." In the discussion on the report it was said that roughly another £10,000 was needed to complete the work, with an additional sum of £1500 or £2000 for furniture and equipment.

THE LANCET.

LONDON: SATURDAY, AUGUST 11, 1923.

EXOPHTHALMIC GOITRE.

THE present issue of THE LANCET contains two articles on the treatment of exophthalmic goitre which are to some extent complementary. In one Dr. G. R. MURRAY describes the treatment of the disease by medical measures; in the other Mr. A. J. WALTON deals with it rather from the surgical standpoint. The articles, however, although complementary, exhibit in a remarkable way the necessity for intimate coöperation between physician and surgeon in treating this condition. An immense amount of thought has been given to the attempt to elucidate the ætiology and treatment of the disease, and the literature of the subject is profuse; but it must be confessed that the problem of ætiology is still unsolved and that treatment, whether medical or surgical, remains almost exclusively symptomatic. But with admission of this fact and of its corollary that surgery may eventually come to occupy a very minor place in the treatment of exophthalmic goitre, yet it must also be granted that by far the most striking advances during the last 15 years have been made along the lines of surgical intervention. The foundations of the requisite knowledge and experience have been carefully and painfully laid by the pioneer work of DUNHILL in Australia, of CRILE and the MAYO brothers in America, and of BERRY and WALTON in this country, and the results have been gratifying to surgeons and patients alike. Surgery in the course of its advance has met with much healthful opposition, but it has proved its worth; and this claim is substantiated by the attitude of an authority such as Sir HECTOR MACKENZIE, who, having been in full opposition ten years ago, is now one of the convinced supporters of surgical treatment.

Even apart from the relative claims of medicine or surgery as regards ultimate success, one of the chief factors lending its weight in favour of surgery is the comparative rapidity with which improvement is obtained. The period of the patient's disability is measured by months rather than by years, and the paradoxical fact remains that surgical treatment, although symptomatic, produces a large proportion of apparent cures. These results have, however, only been obtained by the closest attention to every detail of the procedure. There can be few surgical operations requiring more careful preparation, closer watching of the operative conditions, including even the state of the weather, or more precise operative technique. All these points receive attention in Mr. WALTON'S lecture, though the limits of a single article, while not preventing him from considering the disease from the widest possible point of view, have not permitted him to enter fully into the more technical details. Opposition to surgical treatment was formerly based largely on the operative mortality, but this has now been reduced to a point at which statistics cease to have much importance. It may be assumed that the operative mortality is now in expert hands not greater than 5 per cent. A claim made by any individual operator to a reduction to a figure below 3 per cent. possibly depends upon whether he is operating with a view to favourable operative statistics or solely for the welfare of the individual patient. When a risky operation forms the patient's only hope of recovery great moral courage may be needed by the surgeon in forming the decision whether the operation is justifiable or not. However this may be, there is a very general agreement among surgeons and physicians that medical treatment should be tried for at least six months in almost every case before any operation is performed. This six months' trial is necessary both as a test of the value of drugs and general measures in each case, and as a preparation for operation if this is eventually to be advised.

On these points controversy is now almost at an end. Difference of opinion still exists, however, regarding the value of treatment by X rays. Dr. MURRAY regards this as "one of the most reliable means" of treatment we possess; Mr. WALTON has found its use "very unsatisfactory," and supports the view that radiation has little or no effect on the thyroid by the observation that he has found no appreciable change in the thyroid of those cases that he has operated upon after X rays had been tried. The general trend of opinion seems to be against a belief in the efficacy of X rays, but this is a matter upon which no final opinion can be expressed. It has long been observed that the changes in the thyroid are accompanied by an enlargement of the thymus gland; this was noticed and recorded 100 years ago by Sir ASTLEY COOPER. But little attention has been given as yet to the effects of radiation upon the thymus which, consisting as it does chiefly of lymphoid cells, might be expected to be more readily affected than the thyroid itself. The whole problem of exophthalmic goitre is a fascinating one, whether regarded from the ætiological, pathological, medical, or surgical standpoint. Every one of these aspects may undergo a sudden and complete change in the near future. The articles now published will at any rate mark the place which had been arrived at in the year 1923.

PHYSICAL RESEMBLANCE IN CASES OF DISPUTED PARENTAGE.

IN the Russell *v.* Russell divorce proceedings, which seem likely to give the House of Lords the opportunity of dealing with more than one point of medico-legal interest, the child was brought into court, and the jury was invited to draw an inference as to its paternity from its resemblance or non-resemblance to photographs of the petitioner taken at a similarly early age. "I cannot stop your considering this question of likeness," said Mr. Justice HILL to the jury, "but I myself regard it as a dangerous guide." The fancifulness of family opinions on suggestions of family likeness is indeed notorious, and the fallibility of partisan belief was manifested in the Russell case, when the respondent was incautiously ready, under a confusing cross-examination, to find a resemblance between her baby and the photograph of a total stranger. Lady AMPTHILL, the petitioner's mother, declared that the child in court bore no resemblance to her son, but negative evidence in itself is of but slight assistance. Likeness may be some aid in establishing paternity; unlikeness is none. It may be possible to draw attention to an aggregate of similarities—the colouring of the eyes or the hair, the shape of the ear, and so on; but evidence of this kind in courts of law is hardly developed with as much certitude as evidence of identity in hand-writing—a study in which expert witnesses have come sadly to grief before now. General likeness of feature is not uncommonly relied upon in affiliation proceedings, wherein magistrates, we believe, allow it a certain minor corroborative value in a rough and ready sort of way. One would suppose it was an especially dangerous guide in such cases, since the woman is

usually making her application to the court at a time when the infant is of so tender an age that immaturity of feature must obscure observation and discount confidence. Much more significant than mere resemblance of feature would be any evidence of some definite hereditary characteristic. If the study of blood-groups yields as yet no very positive result for medico-legal purposes,[1] the recurrence of a malformation might assist decision. Twenty years ago, in a Jamaican case, polydactylism was relied on as an inference of family descent.[2] Racial characteristics would also be of value. A coloured skin and woolly hair would be by no means negligible if there were an allegation of negro paternity. Even in Scotland, where this kind of evidence of physical resemblance is not normally permitted, notice has been taken of such points; for instance, in a case 100 years ago a white man was held not to be the father of a white woman's child, the child being a mulatto.

Those who are interested in this point of medical jurisprudence will find a singularly lucid and informing article by Prof. COURTNEY KENNY in our learned contemporary the *Law Quarterly Review*, entitled Resemblance as Evidence of Consanguinity, wherein these matters are admirably set forth. The writer traces the doctrine of the acceptability of such evidence back to the famous Douglas Cause of 1769, the most sensational litigation of its time, a topic on which BOSWELL wrote a pamphlet which he could never induce Dr. JOHNSON to read. In the House of Lords, Lord MANSFIELD, enlarging upon the greater scope for drawing helpful inferences from physical likeness amongst human beings than in the rest of the animal world, said "a man might survey 10,000 people before he saw two faces perfectly alike," while CAMDEN, then Lord Chancellor, in language more rhetorical than judicial, spoke of the physical likeness in the case as "an impression stamped by God himself to prove the legitimacy of the child." In 1915, it may be recalled, evidence of this kind was tendered in the Slingsby case, when an action was brought in the name of a boy of 4 years of age, asking that he be declared the lawful child of Commander SLINGSBY, who supported his claim as against certain relatives who were hostile to it. The judge, Sir BARGRAVE DEANE, then took the unusual course of obtaining the services of Sir GEORGE FRAMPTON, the well-known sculptor, to assist him in the comparison of the features. The judgment, which was in favour of the boy's legitimacy, dwelt upon his extraordinary likeness to Commander SLINGSBY. Both the Court of Appeal and the House of Lords were prepared to allow weight to the judge's own opinion of the likeness, though the calling in of the sculptor, who had neither been sworn as an expert witness nor formally appointed as an assessor, was thought irregular.

Thus, after a long series of decisions it has become clear that the English law, cautiously and for what the evidence may be worth, allows testimony of physical resemblance in disputes about parentage. In a well-known text-book of high authority—TAYLOR on "Evidence"—it is suggested that this legal position is automatically reached as soon as it is proved to the court as a matter of science that children are apt to inherit the features of their parents. In criticising this statement Prof. KENNY points out that there is no case on record wherein the courts have required any such preliminary proof of the general principle. Judicial ignorance, nowadays perhaps less overworked than formerly, is not so blindfold as that. As Prof. KENNY observes, "Tribunals sufficiently familiar with the course of nature to be able to take judicial notice that a woman of 70 will have no more children, and that a husband's non-access for a year disproves the legitimacy of his wife's child, will need no aid from scientific witnesses to assure them that 'Like is apt to beget like.'"

[1] See Blood-groups and Paternity, THE LANCET, 1922, ii., 285.
[2] THE LANCET, 1903, i., 822.

THE MECHANISM OF ALIMENTARY SECRETION.

A GLANCE at recent work in physiology reveals a number of highly critical publications on the subject of alimentary hormones. After the introduction of gastric and pancreatic secretin some years ago the hormonic theory of secretory stimulation seemed to take an assured position in physiology, at least in this country. Very little work on similar lines appeared until quite recently; perhaps the work of IVY should be mentioned first, since he repeated a great deal of EDKINS'S work, which he failed to confirm, and came to the conclusion that gastric secretin was not the normal method of producing a secretion from the stomach. With regard to the question of pancreatic secretin, there is abundant confirmation of the fact that an injection of an extract of duodenal mucosa does cause a secretion from the pancreas. The doubt arises as to whether this is the normal mechanism of pancreatic secretion, for there seems to be a gap in the logic at this point. It will be remembered that BAYLISS and STARLING stated that many substances were capable of producing secretin, but that HCl was by far the most potent and important. DAMADE and DE GRAILLY, in a paper on duodenal tubage read recently before the Société de Biologie,[1] give the results obtained by the injection of substances directly into the duodenum. They passed a duodenal tube on the starving subject, and aspirated as much fluid from the duodenum as possible. They then injected various test fluids into the duodenum through the tube, and withdrew specimens of the resulting secretion at quarter-hourly intervals. These specimens were measured and were analysed for bile, lipase, trypsin, and titratable alkalinity. The observers experimented with milk, skimmed milk, olive oil, and a solution containing HCl and peptone. They found that olive oil and milk increased the volume and the enzyme content to a very marked extent, whilst hydrochloric acid appeared to be without action. In some of the experiments olive oil doubled both the volume and the concentration of the constituents of the secretion. The conclusions to be drawn from the experiments is in direct opposition to the popular conception of the secretin hypothesis, which holds hydrochloric acid to be far the most powerful of secretin producers. The problem of pancreatic stimulation in achlorhydria is brought to mind. Similar results were obtained by BENNETT and DODDS, who used the respiratory method of recording secretion below the pylorus. These workers showed that there was no difference in the effect on pancreatic secretion when acid or alkaline fluids were introduced into the duodenum. Unfortunately, it is practically impossible to devise any method of investigating secretion below the pylorus in which the sources of error are fairly low. Direct tubage of the duodenum is open to more fallacies than tubage of the stomach, since the contents at any particular moment are influenced by so many rapidly varying factors—namely, entrance of stomach contents, bile, pancreatic and duodenal secretions, together with the more or less rapid passage of the resultant mixture through the duodenum. The last ten years have seen considerable advances in the study of human digestion, and as more physiological research is done with normal men as subjects it becomes more and more apparent that a large number of the text-book views on digestion—based on animal work—are quite inapplicable to man.

[1] Tubage duodénal: rôle de quelques excitants chimiques de la sécrétion duodénale, Comptes Rendus de la Société de Biologie, June, 1923.

Annotations.

"Ne quid nimis."

PRESIDENT HARDING.

THE late President Harding, whose death occurred with tragic suddenness as he was apparently on the high road to recovery from an attack of bronchopneumonia, came of a medical stock. His father, George Tryon Harding, is still in practice at Marion, a township of 29,000 inhabitants in Ohio, where the President was born and brought up. Dr. Harding is now in his seventy-ninth year, having qualified at Cleveland University in 1873. A younger brother of the late President bears his father's name and is in practice at Columbus, a city of 240,000 in the same State; he qualified in 1900 at the Ann Arbor University of Michigan and is a specialist in neurology and psychiatry. It is not fanciful to see in the late President's broad outlook some reflection of the medical atmosphere in his early home life.

INDUSTRY AND HEALTH.

MANY influences are pointed to when reason is sought for the steady improvement which has taken place since the middle of last century in the health of the nation. Improved sanitation, better housing, pure water-supply, rise in value of real wages with better feeding, less intemperance, better care of the individual and by the individual due to better education—all are credited with their contribution; but here and there authorities such as Greenwood have stressed the importance of improved conditions of labour brought about partly by natural progress as industrial methods have developed, but more directly by compliance with our code of factory legislation. Few persons are in a position to judge of the progress, since jew are familiar with the insides of our great factories. There exists, however, a body of expert inspectors always at work pressing for and obtaining improvements; probably it constitutes the most effective branch of the public health service. It is formed of two groups, inspectors of factories and inspectors of mines.

We have before us, just published, the annual report of the Chief Inspector of Factories,[1] which tells of the work done during the past year. Signs are reported of a turn in the industrial tide and of opportunities being taken to prepare for future development. The tendency continues for larger establishments to increase in number and size while the smaller workshops get fewer—a movement advantageous to improved conditions of work. The report consists of four chapters in which information is given of the more striking events of the year and of steps taken to administer the law and obtain compliance with the various codes of regulations; then follow three chapters dealing with special investigations, one into the dust content of the atmosphere of workplaces, another concerned with physiological costs of different methods of weight-carrying, and the third with dangers from explosions on oil-carrying and oil-fuel ships. We note with appreciation that the factory department is carrying out such work. The time has gone by when advances in industrial legislation can be based upon "a general consensus of opinion"; the obviously injurious matters are under control. Only by accurate knowledge based on careful research can further pronounced progress be effected. The work of Dr. E. L. Middleton is a good instance in point, since he has been able to advance knowledge concerning the type and size of dust particles inhaled and the kinds of symptoms and invalidity which follow. This knowledge should allow action to be concentrated upon the most injurious types of dust. Somewhat unfortunately for the reader the presentation of Dr. Middleton's research has been divided up; one part appears in the present report and deals with the dust present, the other part, concerned with his clinical findings and physical examinations, has just appeared in a separate report.[2] The reason for this separation is obscure. Dr. E. E. Hewitt's research into weight-lifting is another valuable piece of work. Here is a subject about which much has been said, but little really is known. At last, by appeal to the laboratory and to experiment, the foundations have been laid of useful information as to the energy-cost of labour and to the degree to which this cost can be modified by method.

The work of the medical staff is told of by Dr. T. M. Legge, especially with reference to the control of different forms of industrial poisoning, of which plumbism receives most attention; the cases for the year numbered 247, as compared with 639 in 1902. The international aspect of industrial health is borne evidence to by an inquiry conducted into photo-engraving for the International Labour Office, part of a more general inquiry conducted in several other countries,[3] concerning which it is sufficient to note that the danger from nitrous fumes is recognised and under control in this country.

AN IRISH POOR-LAW HOSPITAL SCHEME.

THE first annual report covering the year ended March 31st, 1923, of the County Galway Board of Health is addressed to the Minister for Local Government, President Cosgrave, who was himself responsible for the order, "Abolish the Unions." Mr. Cosgrave writes in a foreword to the report:

> "It has been well and truly said that kindly care for the poor is the best sign of true civilisation, and, again, that the condition of a nation's poor indicates the character of the national mind. With the coming of Freedom the people of County Galway were quick to realise that, at last, it was in their power to end for ever the contemptuous treatment of the poor resulting from the workhouse system, and they set about inaugurating a new system with energy and zeal. I have great hope that, in County Galway and throughout the Free State, the new schemes, established for the better relief of the poor and the better care of the sick, will be administered prudently and humanely, and that these schemes will win for themselves the confidence of the people. Let us hope that true kindly charity may spring from the good fortune on which, we believe, our country is entering."

The report states at the outset that the whole "workhouse" system was inherently bad and would appear to have been designed to put poverty and misery and vice conveniently out of sight rather than to relieve or comfort or retrieve. A history is given of the ineffectual attempts to amalgamate the unions, beginning in August, 1899, and culminating in the County Council Order of October, 1921, appointing the County Board of Health with instructions to abolish the unions and to set up one central county hospital, one central county home, a home for children and unmarried mothers, and to arrange for the care of other classes of persons chargeable to county rates. The Board of Health worked at high pressure, and within eight weeks, by the middle of December, the unions of County Galway had gone for ever without any sworn inquiries, without any expenditure on evidence, and without even a sealed Order.

The central hospital is located at Galway, the county home at Loughrea, and the Board have made arrangements with the Bon Secour sisters to take charge of the children's home, for which the Glennamaddy Union Buildings have been utilised. Thirty per cent. of the customers of the workhouses disappeared when asked to move, a proportion of whom will probably become recipients of home assistance. Appointments have been made as far as possible from existing staffs, so as to avoid compensation. The claims of 206 disemployed officers have been considered. Much union property has been lost through burning. Home assistance (formerly outdoor relief)

[1] Annual Report of Chief Inspector of Factories for 1922. H.M. Stationery Office. [Cmd. 1920]. 1923. Pp. 153. 5s.

[2] Report on Grinding of Metals and Cleaning of Castings and the Effects of Dust Inhalation upon the Workers. E. C. Macklin and E. L. Middleton. H.M. Stationery Office. 1923.

[3] Dangers to Health in Photo-Engraving, International Labour Review, vol. iii., No. 1, pp. 116–125.

is to be all in kind and not in cash. A medical and surgical staff has been appointed for the hospital. The question of "paying patients" gives trouble, and it is difficult to obtain payment from every patient who is able to pay. The salary of the medical officer of a full dispensary district has been fixed, temporarily, at £300 per annum and of a dispensary midwife at £52. The new county home at Loughrea is an attempt to bring comfort and happiness into the lives of the inmates, who have comfortable dining and recreation rooms and dormitories, games and grounds for pleasant exercise—in fact, a great contrast to the old typical workhouses. The Board are confident that the children's home, placed in charge of the Bon Secour sisters, will prove a valuable addition to the social service machinery of the county, and the necessary reconstruction to put it into an efficient condition is now receiving attention. For harmless lunatics and epileptics the county unit is too small and a provincial institution will be the probable solution. From an economic point of view the changes have resulted in the reduction of the annual demand on the ratepayers from £102,000 (March, 1921) to £59,000 (March, 1924). Economy is not the most important consideration, and the Board claim that, although much requires to be done, they have already achieved a fair measure of success in securing better care for the old and infirm and for the sick, and more kindly thought for the shelter and retrievement of the unfortunate.

The Galway Board of Health have made an energetic start, and all social reformers must heartily wish them success. It may be that just as our farmers go to Ireland to learn about coöperation we may shortly be sending deputations there to learn how to deal with the long overdue changes needed in our Poor-law system.

SPLENIC ANÆMIA.

Dr. William C. Chaney [1] has devoted his thesis for the degree of master of science in medicine at the University of Minnesota to a clinical and pathological study of anæmia based on 69 cases in which splenectomy was performed at the Mayo Clinic from Nov. 14th, 1905, to Sept. 1st, 1920. Allusion to this series was made by Dr. W. J. Mayo at the recent congress of the International Society of Surgery. The average age of the patients was 33 years, the youngest being 2½ and the oldest 69. The distribution was about equal in both sexes, 36 being males and 33 females. There was apparently no familial tendency to the disease. The most frequent symptoms were enlargement of the spleen and a mass in the left side of the abdomen (29 cases), gastric hæmorrhage (20 cases), and weakness (19 cases). Abdominal pain was rarely mentioned as the chief complaint, but 32 patients gave a history of such attacks at some stage of the disease. In many instances the pain was probably due to perisplenitis, but in some cases it was due to other causes, such as gall-stones or chronic appendicitis. With a single exception in which it could not be felt owing to the presence of ascites, the spleen was palpable in every case, its average weight being 1015 g. Its relative position in the abdomen was preserved in spite of its progressive enlargement. On operation 26 patients were found to have enlarged livers and 30 definite cirrhosis of the liver, in only 13 of which the liver was larger than normal. The size of the liver did not seem to bear any relation to the size and weight of the spleen. Ascites was present in 24 cases, 23 of which had cirrhosis of the liver. In the remaining case the liver was enlarged but apparently not cirrhotic. The average red-cell count in the 69 cases was 3,700,000, the hæmoglobin 53 per cent., and the leucocytes 4900. The coagulation time and the fragility test were normal and the Wassermann reaction, which was performed in 60 cases, was negative. A composite chart of the leucocyte count showed that there was an initial rise of the leucocytes immediately after the operation, and that the number gradually increased up to 75 to 100 days after the operation. Lymphocytosis was not characteristic of this series. The highest mortality occurred within 40 days of the operation, during which period there were 12 deaths, 7 of which were in cases with marked hepatic cirrhosis. The principal pathological findings were as follows: On naked-eye examination fibrosis was very evident and the trabeculæ especially prominent. The degree of fibrosis of the reticulum seemed to vary with the amount of arterio-sclerosis, but there was no evidence to show that the fibrosis originated in or around the vessel walls. The amount of lymphoid tissue was usually below normal. The number and size of the Malpighian corpuscles were found to decrease as the size and weight of the spleen increased.

[1] American Journal of the Medical Sciences, June, 1923.

NON-TRAUMATIC DIAPHRAGMATIC HERNIA.

IN a paper read before the annual meeting of the Radiological Society of North America Dr. E. H. Kessler,[1] of St. Louis, remarks that while congenital diaphragmatic hernia is rare, hernia of the diaphragm caused by trauma, such as crushing injuries, gunshot wounds, and injury by the aspirating needle is not infrequent. In the course of two years he has met with four cases without any known history of injury. Two of the patients had been referred to him for gastro-intestinal examination on account of gastro-intestinal disturbance, the third for the confirmation of a diagnosis of pneumothorax, and the fourth had been sent to him for an examination of the heart. In two cases the hernia occurred through an abnormally large opening for the œsophagus, and two had an opening through the dome of the diaphragm. Dr. Kessler points out that we cannot be absolutely certain of the existence of non-traumatic hernia, as an injury may have been received without the patient's knowledge. The symptoms are not very distinctive and the history may be misleading The condition, however, is easily recognised by the use of the X rays. As a rule, there is pain in the lower part of the left side of the chest which will have a resonant note if the stomach is full of gas, and there will be an absence of heart sounds in this area. Vomiting is not always present. There may be distension and dyspnœa, and, at times, regurgitation. Unless strangulation occurs the condition is not fatal. Dr. Kessler has collected 15 cases from recent literature of diaphragmatic hernia, six of which were congenital, eight traumatic, and one, like his own, without any history of injury.

THE TEACHING OF SURGERY BY KINEMATOGRAPHIC FILMS.

Doyen was the pioneer of the kinematographic teaching of surgical technique, and as far back as 1898 some of his operations were filmed for lecture purposes. Little was heard of surgical films in this country until a demonstration given three years ago by the Selig and Phillips Film Companies of the work of American surgeons, in which H. Lilienthal was seen performing a gastrostomy and F. H. Albee fixing an inlay bone-graft. An apparatus for taking the films has recently been perfected by Dr. Alex. v. Rothe, director of the Wilmersdorf Hospital in Berlin. The lens of this apparatus is contained in a spherical aseptic case suspended from the ceiling and focused by means of a periscope; it does not interfere in any way with the surgeon's freedom of action. The success has been such that the German Government has sanctioned the installation in six leading Berlin clinics. Some films obtained with the v. Rothe apparatus were shown by Dr. Bertram Stone last week at a private meeting of medical men in Portsmouth. They were noticeable for showing every detail of the operations from a vantage point which is denied to the ordinary onlooker, and, indeed, to the surgeon's assistant himself. The possibilities for teaching purposes opened up by this method are very great. Text-book descriptions convey little instruction when compared with kinematograph films, and the practising surgeon who nowadays is in

[1] Journal of Radiology, June, 1923.

the habit of travelling abroad at considerable expense to obtain inadequate glimpses of the technique of other operators than himself should in the future be able to study any particular operation as performed by the most eminent specialists in Europe and America without the necessity of going away from home. The surgeons whose work was displayed at Portsmouth were Krause, Bier, and Donitz, and the surgical procedures, which were shown in every detail from beginning to end, included a craniotomy for Jacksonian epilepsy with electrical localisation of the affected area of cortex, wiring a fractured patella, and gastro-enterostomy for a chronic gastric ulcer. The next desideratum is to obtain coloured films.

THE EXPERIMENTAL REPRODUCTION OF MALARIA.

THE problem of relapses in malaria is one of the most interesting from a practical point of view in addition to being one of the most complex. In the daily combat that individuals, associations, and nations engage in against the periodic epidemic, the resistant link in the chain that binds one yearly epidemic to another is represented by the malarial relapse; in treatment and prophylaxis the national measures which are tried are shattered against its exasperating insistence. The cure of the disease, therefore, and the prevention of the annual epidemics will proceed on rational lines as soon as the problem of the pathogenic mechanism of the relapse is solved. That the relapse is caused by the reproduction of the gametes in the circulation is no new idea, but the morphological demonstration of the fact has never met with universal acceptation and the problem in regard to the semilunar bodies is more than ever obscure owing to futile attempts to seek such evidence. There is an alternate method—viz., to attempt the reproduction of malaria by means of inoculating gametes only, and Prof. T. Pontano, of the University of Rome, has lately conducted some very interesting experiments on this point.[1] The experiments came under three categories, the first consisting of six inoculations of malarial blood quininised for a long period and containing crescent forms only, the second consisting of three experiments with malignant tertian blood which after quininisation was free from parasites, and the third of two experiments with malarial blood containing annular parasites and not quininised. Of these 11 experiments, the first six in which blood containing only crescent bodies was inoculated gave four positive results and two negative; the period of quininisation varied, being never less than seven days, from 16 to 74 days in the others, and had the object of destroying the asexual forms of the parasite. The amount of blood inoculated was from 8–10 c.cm., the incubation period varied from 7 11 days, and the identity of the malarial attack was proved by discovery of the parasite in the blood, fever, and enlargement of the spleen. The second series of experiments consisting of three inoculations of malarial blood which showed at first numerous asexual forms of plasmodium præcox and which after prolonged and intense quininisation became free from parasites, all gave negative results after clinical and hæmatological observation lasting from a month to a year. The donors were treated with daily doses of 2 g. of quinine and were sterilised much more easily. The last two experiments of injecting blood containing only annular forms of plasmodium præcox and not quininised both gave positive results. These experiments seem to show that the crescent body is responsible for the transmission of malaria and no longer represents in the circulation a sterile body but a gametic parasite, capable of generating schizonts, and further, that the asexual parasites or schizonts disappear from the circulation during and after intense quininisation. In these researches in which plasmodium præcox was inoculated the same parasite was always found in the relapses and transformation of one kind of malarial parasite into another was never seen. The chief point of interest in these observations is that intravenous inoculation of crescent-containing blood after prolonged quininisation and free from asexual parasites caused malarial infection in unaffected subjects, while, on the other hand, blood containing only schizonts but quininised until the disappearance of the parasites did not cause any infection; the crescents or gametes of plasmodium præcox were capable of proliferation and of generating asexual fever-producing parasites. Moreover, it was found that relapses occurred obstinately after inoculation with crescent-containing blood, while the experimental malaria caused by schizonts was easily curable. The schizonts which accompany the crescents in the circulation disappeared with difficulty after quininisation, while malarial blood was easily sterilised when schizonts alone were found in the peripheral circulation. These two facts find their explanation in the reproductive capacity of the gametes and in their resistances to the specific remedy.

[1] Il Policlinico, Medical Section, xxx., June 1st, 1923

SAILORS AND VENEREAL DISEASE.

THE Merchant's Shipping Act (Amendments) Bill, which received the Royal Assent and became law on August 2nd, removes a disability in the treatment of masters and sailors of the mercantile marine. Subsection 1 of Section 34 of the Merchant's Shipping Act of 1906, whilst it provided for the gratuitous treatment of injuries and illnesses aboard ship and in hospital, categorically excluded venereal disease, with the result that sailors were not only denied treatment but were liable to be left friendless and without funds whilst in foreign hospitals. Foreign doctors and irregular practitioners charged excessive sums for treatment that was in many cases incomplete if not worse. The Royal Commission which sat between 1913 and 1915 advised gratuitous treatment in the British Isles for venereal disease, and last year 162,000 persons availed themselves of this privilege from which British sailors in British ships were excluded. The new Act is no more than a simple act of justice to the British seaman. Although the Bill consisted of a single clause it has entailed a good deal of hard work from Sir John Collie who was in charge of it, and who was fortunate in obtaining the hearty support of the Minister of Health and of Lord Wolmer, Parliamentary Secretary to the Board of Trade, as well as of the Shipping Federation and the Seafarer's Joint Council. From the public health point of view this small Bill is of considerable importance, for the perfunctory treatment which these cases received, and the concealment which the law encouraged, must have had a material effect in spreading disease when the sailors returned to this country. We congratulate the party whose efforts placed it on the Statute book.

THE USE OF THYMUS EXTRACT AS A THERAPEUTIC AGENT.

VERY little is known of the physiology and pathology of the thymus gland nor of the indications for its administration as a therapeutic agent. Felix Boenheim,[1] of Berlin, gives some results of treatment carried out by him with extracts of this organ in various pathological conditions. There is at present no clinical evidence of deficiency of the gland, and therefore it cannot be used as a substitute, as in the case of the thyroid, but experimentally it can be shown that the thymus counteracts some of the other endocrine glands, and so can be used when they are showing signs of excessive secretion. Combined with iodine, Dr. Boenheim finds that thymus has a very beneficial effect on colloid goitre and on exophthalmic goitre, the thymus preventing all traces of iodism. It has, however, no effect on the cysts in cases of cystic goitre, for while the general enlargement diminishes the cysts become more prominent. The treatment has been effective where

[1] Deutsche medizinische Wochenschrift, April 13th, 1923.

X rays have proved valueless. In certain cases of hyperacidity of the gastric secretion associated with hyperthyroidism, administration of thymus restores the secretion to its normal content. Dr. Boenheim explains this phenomenon on the basis that one of the functions of the thymus is to diminish the rate of mobilisation of the chlorides, whereas the thyroid increases it. Increased function of the thyroid leads to increased mobilisation of chlorides. This causes hyperchlorhydria, which in its turn leads to hyperacidity and increased secretion of the gastric glands. The thymus counteracts this chain of events. In other forms of hyperacidity, such as that due to gastric ulcer, and the neural form (tabes), the thymus has no effect. In phthisis, thymus has proved a powerful aid, leading to an increase in the appetite and of the weight. This effect is probably due to its action on the gastric secretion in diminishing the hyperacidity which is often found in tuberculosis. Caution must be used during pregnancy, for here the thymus may have ill effects, and is not capable of antagonising the thyroid. The asthenias show great improvement with thymus administration. Dr. Boenheim recommends the preparation of Burroughs, Wellcome and Co., 1–2 tablets thrice daily, in preference to any of the German preparations.

THE CORPUS LUTEUM AFTER HYSTERECTOMY.

IT is usually assumed that extirpation of the uterus is without any very noticeable effect on the ovaries. Experiments in the guinea-pig by Leo Loeb, of Washington University,[1] show that a complete or almost complete extirpation of the uterus may be followed by a very characteristic effect—namely, a long-continued preservation and activity of the corpus luteum. Instead of beginning to degenerate 14 or 15 days after ovulation, the corpus luteum may remain well preserved and even show mitotic proliferation for 60 days or longer after the last heat. The cyclic corpus luteum thus equals or surpasses in vitality the corpus luteum of pregnancy, which latter has in the guinea-pig a duration of about 65 days. This effect—long preservation of the corpus luteum—occurs if the uterus is extirpated a few days after ovulation. If the uterus is extirpated in very young guinea-pigs when an ovulation has not yet occurred, the first ovulation takes place, notwithstanding the extirpation of the uterus, from 9 to 29 days after the operation. The corpus luteum which thus originates remains preserved for a long period of time with mitotic figures in the lutein cells. Extirpation of the uterus does not directly prevent ovulation, but it has such an effect indirectly by preserving the life of the corpora lutea. In other respects the ovaries in hysterectomised guinea-pigs are normal. Follicles grow in the normal manner, mature, and undergo atresia. These corpora lutea not only live, but they also function and prevent the occurrence of an ovulation during the whole period of their life; but if the corpora lutea are extirpated completely, a new ovulation takes place at an early period notwithstanding the absence of the uterus, an additional proof that the hysterectomy as such does not prevent ovulation. If, however, the maturation of follicles is prevented through underfeeding, a new corpus luteum does not develop in a young guinea-pig which has not yet ovulated, even after extirpation of the uterus. This marked prolongation in the life and function of the corpus luteum may not only be obtained after a complete hysterectomy, but even in cases where a very small amount of uterine tissue has been left unremoved. In hysterectomised animals the mammary gland develops quite markedly, and mitotic proliferation may be observed in such glands as late as 74 days after the last ovulation. If one-third or one-fourth of the length of the uterus is left unremoved the full effects of this operation are not observed, although the life and function of the corpus luteum is somewhat prolonged even under these conditions. It would seem, therefore, that a relatively small part of the uterus can at least to a great extent take over the function of the whole.

[1] Proc. Soc. for Expt. Biol. and Medicine, vol. xx., No. 8, 1923.

THE RÔLE OF PULEX IRRITANS IN THE SPREAD OF BUBONIC PLAGUE IN GREAT BRITAIN.

IN an instructive summary of our present knowledge upon the epidemiology of plague, Dr. William Lethem,[1] assistant medical officer of health for the City and Port of Liverpool, remarks that the disease, as it occurs in Britain now, differs notably from the pest of the Middle Ages. This decrease cannot be attributed solely to public health legislation, but in part at least to the almost complete disappearance of the old English black rat (*R. rattus*), which has been swept away by the brown or Norwegian rat (*R. decumanus*) since its introduction in 1727—one of the most remarkable instances in zoology of the replacement of one closely allied species by another. *Ceratophyllus fasciatus*, the plague flea of colder climates, is by no means such a successful carrier of plague as *Xenopsylla cheopis*, the plague flea of the tropics, nor does it bite man so readily; it lives by preference not on the rat itself, but in the nest, often situated underground. Under experimental conditions, this flea is known to carry infection for 47 days, considerably longer than *X. cheopis*, but owing to its habits man rarely comes into contact with *C. fasciatus*. In the tropics the black rat is a domestic species which lives in close contact with man, and harbours in its coat *X. cheopis*, a ready carrier of plague; the parasite, moreover, forsakes the rat immediately after its death. These differences may account for the scarcity of plague in Britain, but they do not explain why, when a case has occurred, the disease tends to be confined to a single household and to those in most intimate contact with the patient. Dr. Lethem thinks that the human flea (*Pulex irritans*) has hitherto been ruled out as a source of danger on very little evidence. It dies off at 85° F., and is less common in India than in Great Britain. When the outbreaks of plague since 1900 are considered, we find that, unlike tropical epidemics, either no plague rats are found or they are present in insufficient numbers to bear any relation to the human cases. It is suggested that in these instances *Pulex irritans* acts as a direct vector of the infection from one man to another. The most convincing instance of this is the Suffolk outbreak in 1910, in which seven bubonic cases occurred in one house in rapid succession. The human flea can only retain the infection for a few days, whilst the rat fleas can do so for 6 to 13 weeks. On the evidence it seems probable that epidemics of bubonic plague in Great Britain are not caused by the rat flea but that infection is spread by the human flea—*Pulex irritans*.

MINERS' NYSTAGMUS: THE QUESTION OF COMPENSATION.

THE second report of the Miners' Nystagmus Committee of the Medical Research Council, just published, discloses what appears to be a serious flaw in the Workmen's Compensation Act. The report is mainly the work of Mr. G. H. Pooley, but is endorsed by the other members of the committee—namely, Dr. J. S. Haldane, Prof. E L. Collis, and Dr. T. L Llewellyn. After contrasting the relative prevalence of *compensated* incapacity from this cause, on the one hand in France, Belgium and Germany, where it is small, with that in England, where it is great and increasing, it goes on to point out the explanation of this difference. This lies not in an increase in the number of those actually affected, but entirely, the report implies, in a very decided increase in the number of those seeking and obtaining compensation

[1] The Medical Officer, July 21st, 1923.

in this country, and this from three causes. In the first place the new schedule in 1913 altered the nomenclature of the disease from "nystagmus" to "the disease known as miners' nystagmus . . . . whether the symptom of oscillation of the eye-balls be present or not." The result was to include cases claiming compensation for psychoneurosis. Secondly, the maximum compensation money was raised in 1919 from 20*s.* to 35*s.* a week, and while wages and the cost of living have been reduced since then the compensation has remained the same. Consequently, it is found to be not rare for miners disabled from some general disease not arising from their work to be obtaining compensation for nystagmus which, if they had been otherwise in good health, they would not have claimed. In the third place, whereas abroad only severe cases of nystagmus are admitted for compensation, in this country slight cases are admitted under the belief that any degree of oscillation of the eye-balls renders the miner unsuitable for underground work and that it tends to get worse if underground work is continued. Owing to the combined action of these three causes, not only the number of fresh claims but the average duration of incapacity has risen enormously, facts which, the report implies, have no relation whatever to the actual prevalence of the disease, but solely to the facilities for obtaining compensation. In the opinion of the Committee the compensation is in many cases entirely unnecessary, as, in their opinion, mild cases of nystagmus do not necessarily involve incapacity for work, and in fact often persist for years without the knowledge of the patient. The most important conclusion is that "most cases of miners' nystagmus are only partially incapacitated; they benefit physically and psychologically by work. Some require work above ground; others are fit for suitable work below ground. All men in this group should receive every encouragement to start work as soon as possible."

It will be seen that this report throws down a challenge. If its conclusions are justified a drastic alteration in the law of compensation is called for, but the legislator may fairly demand some sort of unanimity of opinion among the experts. The important points at issue are first, whether the psychoneurotic symptoms are an essential part of the disease, and secondly, whether or not slight cases of nystagmus tend to become worse with a continuance of underground work. We do not propose to pass judgment as between the two opposing schools of thought, but merely to call attention to a matter which is not only of medical but of economic and sociological importance. It is alleged that thousands of pounds are being spent every week in a manner worse than wasteful. Can this challenge be answered?

SMALL-POX IN ENGLAND AND WALES.

THE epidemic of small-pox is definitely on the wane; 51 new cases were reported in England and Wales during the week ended July 28th, as compared with 116 new cases (with 1 death) in the preceding week, and 148 new cases (with 1 death) in the week before that. These 51 cases occurred in the following areas: Derbyshire 6 (Long Eaton); Gloucestershire 22 (all in Gloucester, and including 1 case previously notified as chicken-pox); Notts, 16 (Kirkby-in-Ashfield 9, Warsop 6, Basford R.D. 1); Yorks, North Riding, 1 (Middlesbrough); Yorks, West Riding, 4 (Bentley-with-Arksey 3, Doncaster 1); Monmouthshire 2 (Newport 1, Rhymney 1). There is diminishing incidence in all the areas affected and no new areas are involved. The outbreak is now following the course which is to be expected when the disease is frankly recognised and dealt with on the lines of established hygienic experience. The County of Devon, for instance, is bestirring itself, after years of fruitless discussion, to provide isolation accommodation throughout the administrative area, in which only two local authorities, Torquay and Plympton, have as yet made adequate provision. Vaccinations in Gloucester are stated to have averaged 2000 a month since April last.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

XXXII.

TREATMENT OF EXOPHTHALMIC GOITRE AND OTHER FORMS OF HYPERTHYROIDISM.

IN undertaking the treatment of exophthalmic goitre and the allied conditions of simple hyperthyroidism and toxic adenoma, it is important to have a clear conception of the aims of the treatment and of the principles which underlie its practical application. In this group of maladies we have to deal with one common factor, the abnormal activity of the thyroid gland, in consequence of which an excess of secretion is poured into the blood and conveyed to the tissues of the body in which the thyroidal hormones raise the metabolic rate above the normal level. The problem we have to consider is how to restore the functional activity of the thyroid gland to a normal level as soon and as safely as possible. Whatever the true causation and pathology of exophthalmic goitre may be, experience shows that, provided no irreparable damage has been sustained by the heart, kidneys, or pancreas, when the function of the thyroid gland is restored to a normal level recovery takes place.

In estimating the results of treatment, the pulse-rate should be taken daily under the same circumstances when the patient is at rest, and the weight recorded each month. A steady diminution of the pulse-rate and increase in the weight are favourable indications. The tremor, nervousness, and mental excitability are additional guides as to progress. Regular monthly estimations of the basal metabolic rate, when circumstances allow of accurate observations being made, are of great value in assessing the value of treatment.

General Management.—The circumstances of each individual case should be fully investigated, so that all conditions which are likely to stimulate the thyroid gland may, as far as possible, be either removed or guarded against. Some of the most injurious factors which can often be controlled are those arising from nervous strain and anxiety, physical exertion, septic absorption, sexual excess, erroneous diet, and residence near the sea or in a hot climate. Other factors, such as accident, fright, shock, and worry, are beyond our power to prevent, though their ill-effects may be diminished by the exercise of additional care immediately after their occurrence. Thus, nervous strain arising from some special occupation may be relieved by change of work in mild cases, or by complete rest in severe ones. Change of surroundings, as from the town to a quiet country place, is often of service. The seaside should be avoided, as the symptoms are apt to be aggravated by a visit to the sea. Any occupation which involves such efforts as accelerate the already frequent pulse must be given up. In severe cases complete rest in bed for several weeks or even months is advisable. In mild cases, rest in bed for 12 hours at night and for two hours in the afternoon may be sufficient. Rest in the open air in a quiet garden is suitable for those who can stay in the country, and in warm weather as little exercise as possible should be taken. Any septic focus in the mouth, naso-pharynx, or elsewhere must be dealt with at the commencement of treatment.

Diet.—Red meats and their extracts should be avoided. Fish, eggs, chicken, and fat bacon can be allowed. Bread, vegetables, and fruit are suitable, and butter may be taken sparingly. If there is emaciation, milk may be given up to as much as three or four pints in the day. Half an ounce of cod-liver oil should be given daily in one or two doses. Alcohol and coffee should not be taken.

Medicinal Treatment.—A few drugs are useful in the treatment of the malady, and others are helpful in the

relief of special symptoms and complications. Quinine hydrobromide, gr. iii.-v., thrice daily is of much value, though some patients are intolerant of it. Liquor arsenicalis, ℥. iii.-v., may be given twice or thrice daily for three weeks each month for several months. If nervousness or tremor are marked symptoms, it is advisable to add sodium bromide, gr. v., to the mixture. The various organic preparations which have been employed, such as rodagen, half a drachm, or thyroidectin, gr. v., thrice daily, and the like, have yielded no consistently good results. The whole of the milk of a thyroidless goat has an excellent effect in some cases when an adequate supply has been obtainable. Suprarenal tablets have proved helpful in some cases. No preparation which contains any thyroid extract or iodine should be given.

Radiological and Electrical Treatment.—A prolonged course of treatment by X rays or radium in skilled hands is one of the most reliable means we possess of controlling the activity of the thyroid gland, and in many cases, of hastening its return to a normal condition. When X ray treatment is available, a dose of one and a half Sabouraud units, measured before filtration and passed through a layer of 3 mm. of aluminium and boiler felt placed on the skin, may be given twice a week. Later on this dose may be given at lengthening intervals, according to the progress made. Larger doses may be given at longer intervals, the object being to give as large a dose as possible without injury to the skin. This treatment finds its most favourable opportunity in cases of simple hyperthyroidism and in the milder cases of Graves's disease. It is also of value in severe cases. In cases of Graves's disease in which the goitre is unusually large, and in cases of toxic adenoma, the results are unsatisfactory, and if a subsequent operation becomes necessary, the capsular adhesions render it more difficult. For patients who live at a distance radium is more convenient, as the plates have only to be applied for 24 hours once every six weeks. A radiotherapeutic course requires six months, a year, or even two years to produce its full effect. Radium is unsuitable for acute cases of exophthalmic goitre, as the initial increase of secretion may prove fatal. When radiotherapeutical treatment is not available a mild interrupted current may be applied by means of electrodes placed over the goitre and at the back of the neck for an hour twice a day.

Complications.—Serious complications may develop in cases of Graves's disease. Thus dangerous crises may be set up by periods of acute hyperthyroidism during which the rapid increase of thyroxin and possibly of other hormones in the blood may cause a marked exacerbation of all the symptoms. In other cases only certain organs react violently to the stimulation. Thus there may be gastro-intestinal crises with intractable vomiting or diarrhœa. Cardiovascular crises may occur with excessive palpitation, greatly increased pulse-rate, and marked restlessness. In all these absolute rest and quiet are essential. Cold may be applied alternately over the goitre and to the præcordium, if the pulse-rate is high, by means of a Leiter's tube or an ice-bag. In gastro-intestinal crises enemata of 5 to 10 oz. of warm water containing a drachm each of sodium bicarbonate and glucose may be given every four hours or run slowly and continuously into the rectum by syphonage from a thermos flask. Half an ounce of pancreatised milk may be given by the mouth every half hour. The vomiting may be controlled by small doses of morphia, given hypodermically or in a suppository, or by the injection of 0·5 c.cm. of pituitrin every 6 or 12 hours. Failing these, 5 gr. of chloral hydrate in a cachet may be given several times in the day. When diarrhœa is a prominent symptom, laudanum may be given with dilute sulphuric acid as required. In the later stages of severe cases of exophthalmic goitre chronic myocarditis with dilatation and hypertrophy of the heart may be present. Under these circumstances there may be auricular fibrillation and gradual cardiac failure. The treatment of this complication is the same as in cardiac failure from other causes, and digitalis or quinidine sulphate may appropriately be employed.

Surgical Treatment.—Although discussion of the surgical treatment does not come within the scope of this article, a brief statement as to the chief indications for operation may be given. In cases of simple hyperthyroidism and in mild cases of Graves's disease no operation is required. In cases of toxic adenoma of the thyroid gland, and in all cases in which signs of pressure on the trachea or recurrent laryngeal nerves are present, operation is required, as cases of toxic adenoma do not as a rule do well under medical treatment, and pressure signs require immediate relief. The selection of suitable cases of Graves's disease for operation is difficult. Cases in which no improvement has taken place after six months' trial of medical treatment, and those in which the goitre is unusually large, are the most suitable for operative treatment by ligation of the thyroid vessels or by partial removal of the goitre. In other cases the physical condition, social position, and wishes of the patient must all be fully considered in the selection of each individual case for operation, for with every care the mortality after operation, though gradually diminishing, is still from 3 to 5 per cent.

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Special Articles.

BRITISH DENTAL ASSOCIATION: ANNUAL MEETING AT MANCHESTER.

ABOUT 400 dentists are attending the forty-third annual meeting which opened at Manchester in the College of Technology on July 31st, the President being Mr. George G. Campion, of Manchester. It is 31 years since the Association met in this city and the President for the current year is the son of Mr. H. Campion, of Manchester, who was President when the Association last visited the city. The Senior Pro-Vice-Chancellor of the University—Mr. Edward Fiddes—described the growth of the dental school established at the University 39 years ago, and now attended by over 140 students, university training having superseded the former practice of apprenticeship.

President's Address.

The President, in his inaugural address, emphasised the change that had come over dentistry in the last two decades, and congratulated the Association on the fact that their views as to the relation of the State and the dentist had at last received recognition by the Government, and that the Government had at last laid down a skeleton organisation for dealing with this urgent problem of national health and efficiency. It was now known, on the authority of a Government Committee's report, that one-third of all disease in the country was due directly or indirectly to dental disease. Among the general population it was found that the condition of the teeth of women was worse than that of men. In the Western Command from April, 1917, to March, 1918, it was found that between 80 and 90 per cent. of recruits were in need of dental treatment. To avoid the trouble which follows dental disease it was essential to provide from earliest childhood for adequate inspection and treatment, including the practice of cleanliness, the use of a detergent diet, and early conservative dentistry. The State and local authorities had created a nucleus of an organisation for the application of dental knowledge by arranging a dental service in 232 of the 1870 maternity and child welfare clinics now functioning in England and Wales. Other forms of dental service were those of school clinics, tuberculosis

clinics, additional benefit under the Health Insurance Act, industrial dental clinics, and the Royal Naval Dental Service and Army Dental Corps. At present—even with the clinics privately organised by a large number of industrial firms—the national service was quite inadequate. School clinics were at present staffed by about 450 dental officers—compared with the school population for England and Wales of about 7 million. For efficient dental work it was calculated that there should be one dental officer for each 5000 children. At present there was not the equivalent of one officer for each 15,000 children. As showing what can be done by the cumulative benefit of treatment over a number of years at a school dental clinic, Cambridge affords a classical example. In 1908, at this clinic only 15 per cent. of the children had sound permanent teeth; the figures in 1920 had been reversed, and the percentage had become 51. Views stated by members of the dental profession ten or more years ago were now proclaimed by the Ministry of Health. Above all the enlightenment of the public on the need for early conservative dentistry must not be relaxed by the Association. The next meeting of the Association will be held in Edinburgh next year, and Mr. J. S. Amoore (Edinburgh) was elected as the succeeding president.

Effects of Diet on the Structure of the Teeth.

At the meeting on August 1st Mrs. May Mellanby spoke on the effects of diet on the structure of the teeth, expounding the researches she had made on behalf of the Medical Research Council on the question of growth of the teeth in dogs. It was proved that the amount of calcium in the diet was not the dominant factor in the calcification of teeth; in this connexion particular importance had to be attached to the content of vitamin A in the diet, which, taken in large amounts, retained and incorporated in the tissues of the body, more especially in the teeth, the calcium salts in the diet. If this vitamin was deficient in the diet, the more cereal was eaten the worse formed were the teeth. Both dentine and enamel were very defective on a diet of oatmeal, but when cod-liver oil rich in vitamin A was added to the oatmeal diet, the dentine and enamel were practically normal. Mrs. Mellanby wished to make it clear that the calcium and phosphorus of the diet do not in themselves control teeth calcification but that their action is subservient to other elements of the diet. The effects of oatmeal on the formation of the teeth raised the question of the excellent teeth of the Highlander at a time when oatmeal formed a large part of his diet. No doubt the calcifying vitamin of herring would play an important part. Milk would also antagonise the action of oatmeal. Thus a diet of milk, eggs, green vegetables, herring, and oatmeal would be expected on the basis of the experimental results to produce perfectly normal teeth. On the other hand, dietary made up of cereals, and especially oatmeal, together with such food as vegetable margarine, lard, lean meat, jam, sugar, tea, all substances of widespread consumption in modern dietaries, would be expected to lead to the development of defective teeth and jaws.

Æsthetic Considerations.

Mr. Edward C. Kirk, in a communication on Artistic Harmony in Dentures, expressed regret that despite the best endeavours of dentists to persuade their clients to accept artificial teeth which were in harmony with the wearer's other features and expressive of individual character, the public appeared still to demand the ghastly exhibits of unquestionably false teeth of geometrical evenness and glittering whiteness, worn indiscriminately by certain sections of the community, young and old, of both sexes. The speaker suggested a connexion between this untoward phenomenon and the superstition, prevalent in some parts of central Europe, that if as the milk teeth were shed the child dropped them into a mouse-hole, the succeeding teeth would be small, white, and even like the teeth of a mouse.

BRITISH MEDICAL ASSOCIATION.

ANNUAL MEETING AT PORTSMOUTH.

(Continued from p. 233.)

SECTION OF SURGERY.

WEDNESDAY, JULY 25TH.

ON the first day of this section Sir HENRY GRAY, the President, being in the chair, a discussion on the

Treatment of Obstruction of the Colon

was opened by Prof. A. H. BURGESS (Manchester), who based his remarks on the statistics of the Manchester Royal Infirmary during the ten year period 1913–22. During this time out of a total admission of 66,373 cases to the wards, 1278 were for obstruction of the small or large intestine—the term "obstruction" being taken for the purpose of the discussion to include only those cases in which some gross mechanical obstacle was present. Excluding cases of intussusception, the colon was concerned in 199 of the 1278 cases, or 17·87 per cent., the pathological causes of the acute obstruction being distributed as in Table I.

TABLE I.

—	No. of cases.	Deaths.	Percentage mortality.
Malignant growths of colon ..	173	59	34·1
Extracolonic malignant growths	2	0	
Strangulated hernia	9	3	33·3
Adhesions	7	0	
Tuberculous disease of cæcum ..	2	0	
Acute diverticulitis	1	0	
Volvulus	5	2	40·0
Total	199	64	32·2

The table showed the great preponderance of malignant growth as compared with other causes of acute colonic obstruction, constituting nearly 90 per cent. of all cases. During the period under review 485 cases of malignant growth of the large intestine were admitted, 173 of which were associated with acute obstruction, giving a percentage of 35·67. A table was given showing the proportional distribution of these growths with the relative incidence of acute obstruction at each site and the mortality. The figures showed that the rectum was concerned in 46·59 of all growths, but only for 10·98 of those associated with acute obstruction. The sigmoid colon showed a percentage frequency of 29·48 but occurred in 51·44 per cent. of all cases of acute colonic obstruction from malignant growth. The cæcum showed a percentage frequency of 5·15, and a percentage association of obstruction of 6·35. It was also shown that only 13·29 per cent. of the growths causing obstruction were on the right side, as against 86·7 per cent. on the left—a fact not without importance in relation to operative treatment.

The various operations performed for malignant and non-malignant obstruction were included in Table II.

He laid it down as a basic principle of the treatment of acute obstruction of the colon that—contrary to the principle obtaining in the case of the small intestine where it is the operation of choice—resection with immediate restoration of continuity (that is, without drainage of the proximal bowel) is an unjustifiable procedure. In the series under review it was performed 9 times with 3 recoveries (2 of cæcum, 1 of sigmoid) and 6 deaths (1 of transverse colon, 1 of splenic flexure, and 4 of sigmoid)—a mortality of 66·6 per cent., which was almost double the average mortality of the whole series. In the ileo-cæcal region the conditions approximated to those obtaining in the small bowel, and this was the only region of the colon in which primary resection followed by immediate anastomosis might be done. Whenever resection of the colon was essential, as in gangrene from volvulus and internal strangulation, it should be combined with drainage of each end of the bowel, preferably by tying in a Paul's tube; at a later operation continuity might

be restored. This two-stage operation was sometimes advocated in acute colonic obstruction from malignant growth, but should, in the speaker's opinion, be restricted to cases in which the colon was grangrenous. In malignant growth it was better to do a cæcostomy for the immediate relief of the obstruction and to follow this up later by a thorough excision of the affected portion of the bowel and its corresponding lymphatic area.

TABLE II.

—	No. of cases.	Deaths.	Percentage mortality.
A. *Malignant Obstructions*—175 cases (173 growths of colon, 2 extracolonic growths).			
1. Exploratory laparotomy, followed by—			
(*a*) Primary resection ..	9	6	66·6
(*b*) Lateral anastomosis ..	11	3	27·7
(*c*) Cæcostomy	56	18	32·1
(*d*) Colostomy, transverse ..	13	5	38·5
(*e*) Colostomy, sigmoid ..	63	21	33·3
2. Colostomy alone (all sigmoid)	17	5	29·4
3. Cæcostomy alone	5	3	60·0
4. Enterostomy alone.. ..	1	1	100·0
Total	175	62	35·2
B. *Non-Malignant Obstructions.*			
1. Herniotomy..	9	3	33·33
2. Division of adhesions ..	7	0	
3. Ileo-sigmoidostomy for tuberculous cæcum	2	0	
4. Laparotomy and drainage for acute diverticulitis	1	0	
5. Volvulus—			
(*a*) Untwisting alone ..	1	1	100·0
(*b*) Untwisting combined with colostomy	4	1	25·0
Total	24	5	20·8
Total of all cases ..	199	67	33·7

Lateral anastomosis was performed in 11 cases with 3 deaths. In all these cases a preliminary laparotomy had disclosed an inoperable malignant growth and the palliative anastomosis was the alternative to colostomy. In obstruction from growth of the colon a cæco-colostomy should be performed rather than an ileo-colostomy in cases where the ileo-cæcal valve is competent to prevent the regurgitation of cæcal contents into the ileum, an ileo-colostomy entailing in such circumstances, unless combined with either appendicostomy or cæcostomy to prevent tension, a serious risk of gangrene or perforation of the cæcum.

Prof. Burgess then discussed the treatment of acute obstruction of the colon: (1) When it was uncertain whether the obstruction was in the ileum or in the colon; (2) when the obstruction was known to be in the colon but its exact situation was unknown; and (3) when the site of the obstruction in the colon was definitely known.

1. A careful inquiry into the history was useful, the absence of any intestinal troubles prior to the onset of obstruction being in favour of the implication of the small intestine, while pain, diarrhœa, constipation, mucus, with or without blood, in the stools suggested colonic obstruction. The use of the sigmoidoscope and of radiography was scarcely practicable in acute cases, and reliance had to be placed chiefly upon a physical examination of the distended abdomen; its shape, the position of the bulging, the presence of "ladder patterns," as in ileal obstruction, the detection of visible or of palpable peristalsis. Auscultation was also useful to an experienced observer. The "keynote" to the diagnosis was the condition of the cæcum; if this was visibly distended or was felt alternately to harden and soften under the fingers the obstruction was distal to it. When all methods of physical investigation failed, including rectal and vaginal examination, an exploratory laparotomy must be made, preferably through a paramedian incision, splitting the fibres of the lower portion of the right rectus abdominis. When the obstruction was located and its cause found to be an operable growth, the incision could usually be closed and a cæcostomy performed through a "gridiron" incision in the right iliac fossa. Where the growth was inoperable, short-circuiting was indicated where practicable, or failing this a colostomy just above the growth. In the most desperate cases of group (*a*) it was better to make no attempt to find the obstruction, but the cæcum should be exposed under local anæsthesia, and if found distended should immediately be opened ("blind" cæcostomy); if collapsed the first distended coil of ileum presenting should be opened and drained ("blind" enterostomy). In the latter case, should the patient survive further surgical intervention would certainly be called for later on.

2. In cases belonging to this group there was, as the statistics showed, an overwhelming chance that the obstruction was a malignant growth and situated on the left side. In severe cases a "blind" cæcostomy under local anæsthesia was indicated In mild cases, in the absence of any localised tenderness over the cæcum, conservative measures such as repeated enemata, &c., might remove the obstruction, allowing a radical exploration to be made at a later date In the moderately severe cases the choice of preliminary procedure lay between a paramedian exploration and a "blind" cæcostomy. The advantages of the latter were: (1) It could be performed rapidly under local anæsthesia, and with the minimum of shock. (2) There was no interference with the growth and no new adhesions were formed. (3) The cæcostomy opening was as far removed from the area of any further operation as an artificial anus could be. (4) It formed a good safety valve during any subsequent resection operation, giving rest to the sutured bowel and minimising the risk of leakage at the point of suture. (5) When not further required it often closed spontaneously on leaving out the tube, or in any case could readily be sutured. On the other hand, an adequate exploratory operation was always difficult in a distended abdomen, required a general or spinal anæsthetic, and gave information (as to the site and nature of the obstruction) which, however valuable, was not essential at that stage of the proceedings. The speaker was firmly convinced that when in any given case of acute intestinal obstruction the site of obstruction could be located to the colon but was not more precisely known, and where there was no special reason to suspect volvulus or internal strangulation, "blind" cæcostomy should be performed as the sole immediate procedure.

3. In this group in which the actual situation of the colonic obstruction was known, where rectal examination showed the growth to be inoperable on account of local fixation to bladder, prostate, uterus, or sacrum, the operation of choice was a sigmoidostomy, since with a growth so low a future palliative short-circuit was impracticable. Where the growth was determined by rectal palpation to be operable, he preferred a laparotomy through a left paramedian incision, concluding the operation by fixing a loop of the sigmoid into the wound and opening either at once or a few hours later. In cases of palpable abdominal tumour or where obstruction had supervened shortly after a sigmoidoscopic or radioscopic investigation had disclosed its probable site, a cæcostomy was indicated for the immediate relief of obstruction, leaving the field clear for a later exploratory laparotomy, when resection, short-circuit, exclusion, sigmoidostomy, or transverse colostomy might be feasible, in this order of preference. Where none of these was practicable, the incision would be closed and the cæcostomy left as the permanent condition.

In conclusion, Prof. Burgess pointed out that although he had laid stress throughout his paper on what he believed to be the correct principles in the treatment of colonic obstruction once it had developed, yet it was to the earlier recognition of its most frequent cause—malignant growth—prior to the onset of that very serious complication that the attention of surgeons should in the future increasingly be directed.

Mr. SEYMOUR BARLING (Birmingham) said that there were three points he would wish to make. First with regard to diagnosis, he thought that no one

would deny that it was of great advantage to the surgeon if the site of the obstruction were accurately known, and he emphasised the difficulty that this presented in so many cases. He therefore put before the meeting a new method of diagnosis, which he had recently used in three cases of acute intestinal obstruction. Provided that the patient was in a sufficiently fit condition to be able to stand upright for five seconds there was no contra-indication to the method. The patient was taken to the X ray room and screened in the upright position. In his case the intestine above the obstruction showed out very distinctly, and in one case in which the sigmoid was the seat of an annular carcinoma a horseshoe area of gas was seen with pools of fluid at each end, one in the cæcum and one just above the growth. He suggested that this procedure was of great value, and enabled one to relieve the obstruction with one's eyes open, and without any need for exploring the abdomen. Secondly, he wished to remind the section once again of the very poor operative risks most cases of acute intestinal obstruction were. He was sure that they had all had those distressing cases of collapse after quite small procedures. Therefore he urged that a cæcostomy done under a local anæsthesia was the operation of choice, and gave the lowest immediate mortality. Lastly, though an advocate of the cæcostomy, yet he realised some of its disadvantages, amongst them being the undoubted fact that it did not empty the distal part of the colon, and did not obtain that collapsed and empty colon that surgeons wished to see at the line of resection. He thought that the advocates of a blind cæcostomy must face the possibility of a second drainage operation prior to the main attack on the growth.

Mr. ARTHUR MITCHELL (Belfast) felt that he must take exception to Mr. Seymour Barling's remark that quite small procedures produce sudden and severe collapse. He thought that any exploration in cases of acute intestinal obstruction was very dangerous. It required extreme gentleness and absence of exposure, for the distended gut was very easily contused by the hand in the peritoneal cavity, and such contusions only added to the causes giving rise to toxic absorption. He was quite in accord that the easiest, safest, and more rapid method of relieving the obstruction was the correct thing to do, and he agreed that a blind cæcostomy fulfilled these conditions. At the same time he agreed that a cæcostomy did not always completely drain the obstructed colon, but it did abolish absorption of toxic contents. He was interested in Prof. Burgess's figures concerning lateral anastomosis, and was of opinion that this procedure might be more often used with advantage in inoperable cases. He considered that when a permanent colostomy was to be performed the most important consideration was the comfort of the patient, and in this connexion he strongly advised that the distal end should be completely divided, closed, and dropped back into the peritoneal cavity, and the proximal end sutured to the wound. He entered a plea for earlier diagnosis, and emphasised the great importance of diarrhœa as an early symptom. In conclusion, he quoted a case of a man aged 72 with acute obstruction of the sigmoid, in which the cause was a syphilitic infiltration and which was cured by antisyphilitic treatment.

Mr. HERBERT CARSON (London) said that he had had 79 cases of this kind in the large intestine, of these two were due to diverticulitis, five to ileo-cæcal tuberculosis, and 72 to carcinoma. Of these 45 per cent. had had acute intestinal obstruction, the site of which was mainly on the left side. Up to three years ago, only 35 per cent. were operable, but in the last three years the proportion had risen to 52 per cent. He wished to state emphatically that these cases should never be allowed to become obstructed, and that a great need existed for educating students and the general public in the premonitory symptoms. He recognised three clinical types of obstruction of the colon: 1. Partial obstruction, in which symptoms called early attention to the diagnosis, and in which a carefully planned radical attack on the growth was possible. 2. Chronic obstruction which had become acute, in which it was permissible to temporise, and treat with enemata and aperients, keeping a strict guard on the condition of the cæcum. These cases might thus be converted into group 1 cases. If necessary, the cæcum acting as the guide, a drainage operation might become necessary. 3. Acute obstruction the first sign. In these no single stage operation was ever possible, except with growths at the ileo-cæcal valve. He confessed that he was not yet convinced of the advantage of blind cæcostomy, and in his opinion there were the following disadvantages: cases of intussusception with the lump in the left side were unsuitable, a volvulus was not affected at all by a cæcostomy, cases of double obstruction in which the small intestine was involved secondarily to the large were not relieved, and lastly, in inoperable cases a cæcostomy might be a most unsuitable permanent condition, and yet some cases would not stand another operation. But he was a firm believer in a cæcostomy as a step in the technique of every resection. He also pleaded for the avoidance of long blind ends.

Mr. P. LOCKHART-MUMMERY (London) congratulated Prof. Burgess on his excellent paper. He pointed out that the mortality from operations for acute intestinal obstruction was 32 per cent., and that this, though comparing favourably with the figures from hospitals dealing with large industrial areas, was far too high, for we could not face a one in three death-rate with equanimity. He considered that this mortality could be greatly improved by performing blind cæcostomy and postponing the exploration till a later time. The other important factor was the use of local or regional anæsthesia, for he believed that inhalation anæsthesia should never be used in these cases. Mr. Lockhart-Mummery said that not only did he not do a blind cæcostomy on every case of acute colonic obstruction, but he made a practice of performing it as part of any operation which involved division of the colon. He had found that the mortality of colectomy had fallen considerably since the adoption of this procedure. The method of performing cæcostomy was the one he had described in THE LANCET, 1922, ii., 1117. He again stressed the importance of performing this operation under local anæsthesia.

Prof. C. A. PANNETT (London) said that he thought it was by no means easy to be certain that the obstruction in any given case was of the small or the large intestine, for these patients were usually toxic, often in great pain, and frequently unable to give a lucid history. He was personally against a blind cæcostomy unless he was sure of the large bowel being the seat of the obstruction. He quoted 47 cases of acute intestinal obstruction of the colon at St. Mary's Hospital; all had been explored at the time of the drainage operation. Of these one had died, and he felt that the dangers resulting from a further exploration were greatly over-estimated. Of these 47 cases only one-third were operable, and of the remaining two-thirds just over one-half could not be short-circuited. It seemed reasonable to him to ask the advocates of a blind cæcostomy why these people should have two colic fistulæ instead of one. When a blind cæcostomy had been done, he felt that every effort should be made to localise the growth prior to the main attack on it, and in this connexion he mentioned the fact that barium enemata were occasionally very misleading, and he showed four lantern slides illustrating X ray plates in which the barium had got past the stricture and filled the gut above.

Mr. GEARY GRANT (Cardiff) said that in his opinion a cæcostomy with a tightly distended œdematous and friable cæcum was not so easy as some would have us believe, and he was in favour of a colostomy.

Mr. C. P. CHILDE (Portsmouth) thought that in this question it was most desirable to exercise sound judgment and not to be bound by any hard-and-fast rules. He felt that it was self-evident that very severely toxic cases could only be dealt with satisfac-

torily by a blind cæcostomy, but he was convinced that early cases could be explored without any immediate ill-results following.

Mr. R. D. MOTHERSOLE (Bolton), speaking from the point of view of the general practitioner, said that he thought a colostomy had much to recommend it over a cæcostomy.

Mr. M. MAMOURIAN (Ashton-under-Lyne) said that the procedure was governed by the patient's condition. When he found a cæcostomy necessary he used a Murphy's button.

Prof. BURGESS, in concluding the discussion, said that he was convinced that blind cæcostomy was the right thing to do. He quite agreed that perhaps one or two cases of volvuli or gangrenous intestine in 100 might be missed, but what was that if the mortality were reduced from over 30 per cent. to under 10 per cent.

A short paper on the question

Are the Results of the Operative Treatment of Malignant Disease Better than Twenty Years Ago?

was read by Mr. HERBERT J. PATERSON (London), who pointed out that although there was no doubt that during the past quarter of a century surgical technique had greatly improved, and that many of the risks of operation had been materially lessened in spite of the fact that operations practised for malignant disease had become more extensive and radical, there was no convincing evidence that the proportion of ultimate successes was greater than was the case 20 years ago. The returns of the Registrar-General showed an increase in deaths from cancer, amounting to nearly 30 per cent. in the year 1921 as compared with the year 1900, and it was difficult to ascribe this increase entirely to the heightened incidence of cancer and to more accurate death certification. A review of post-operative statistics showed that the percentage of cases free from recurrence after 3 to 5 years was much the same now as it was 25 years ago, and this was true even where mammary cancer was concerned, in operations for which 20 years ago the axilla was not cleared out as a routine measure but only where there was evidence that the glands were involved. In connexion with this apparent lack of progress he would suggest the possibility that the teaching of pathology had been allowed to override clinical experience—e.g., cancer cells had been shown microscopically to be scattered far beyond the macroscopic limits of a growth, and therefore a wide and extensive excision was advocated—whereas clinical experience had shown that operations in which the margin of the growth was very close to the line of resection were sometimes followed by a long interval of immunity, a fact which suggested that the tissues could and often did destroy the isolated cells which were left behind beyond the line of excision. The efforts of modern surgeons had been directed towards more extensive operations, whereas earlier diagnosis and earlier operation should have been their aim.

Mr. Paterson also suggested that in modern surgery the lymphatic glands were attacked too ruthlessly, and that the part played by these glands in the defensive mechanism of the body was scarcely sufficiently appreciated. He recalled Crile's statement that remote visceral metastases were found in less than 1 per cent. of the cases of cancer of the head, face, and neck, and that the disease was almost invariably limited to the extensive collar of lymphatics surrounding the neck; but whereas Crile looked upon this fact as a clear indication of the necessity for the removal en bloc of these glands, the speaker believed this inference to be illogical, and urged that the barrier of glands should be left for several weeks after the removal of the primary growth. He had operated upon eight cases of carcinoma of the tongue by this method, one of whom died of broncho-pneumonia seven days after the operation, one died 15 months after the operation, one was untraced, and was assumed to be dead, while the remaining five were alive and well, four of them more than six years after the original operation. For the past three years he had adopted a similar method in dealing with cancer of the breast, but it was too early to judge of results. He submitted that there was solid justification for an extended trial of this procedure of operation in two stages whenever practicable—i.e., removal of the growth, followed at a later period by removal of the glands. He concluded by emphasising the necessity for a vigorous campaign to impress on the public the supreme importance of early recognition of the disease, and of early operation, which, so far as their present knowledge went, offered the only hope of cure.

THURSDAY, JULY 26TH.

On the second day, Sir HENRY GRAY (Aberdeen) again being in the chair, Mr. D. P. D. WILKIE (Edinburgh) opened a discussion on the

Treatment of Acute Primary Infections of the Hand, including sequelæ. Mr. Wilkie began by pointing out the great importance of the subject both from a medical and from an economic standpoint, touching as it did the wide problems of infection, resistance, and immunity. He deprecated the tendency in hospital practice to look upon infections of the hand as belonging to the realm of minor surgery to be dealt with by the less experienced members of the staff, whereas not only did no class of case present more difficult problems, but also upon the line of treatment adopted the very life of the patient might depend. In discussing the subject there were certain fundamental pathological considerations that had to be borne in mind. The introduction of pathogenic micro-organisms into the tissues was followed by well-defined general and local tissue changes; but although these reactions were essentially protective in function, in the hand the outpouring of lymph and the local aggregation of phagocytes might, in areas in which space was limited, cause a high degree of tension, endangering the vascular supply and the vitality of the part. In addition to this, the concentrated toxins of the infecting bacteria, together with the proteolytic ferment liberated from the dead and dying phagocytes, tended to produce the death and liquefaction of the neighbouring tissue cells, and from such an area there would inevitably be a deleterious absorption of bacterial toxins and proteoses. The aim of surgical intervention was to provide for the drainage of such areas of suppuration and tension before the occurrence of irreparable damage; and in this connexion it was well to bear in mind that the disability following even an unnecessarily extensive incision was negligible in comparison with that resulting from a burrowing, liquefying, and prolonged suppuration followed by the inevitable fibrosis, fixing tendons and muscles, stiffening joints and compressing nerves and blood-vessels. The preservation of tissue without function was a mere waste of time and energy.

Anatomical Considerations.—There were three points in the anatomy of the hand that had an important bearing on the spread of infection in this region. (*a*) The extensive network of lymphatic vessels in the hand, especially on its palmar aspect. (*b*) The division of the cellular tissue into spaces. In the pulp of the fingers dense fibrous septa, extending down to the periosteum of the phalanx, enclosed the fatty tissue, infection of this tissue leading to great tension, with necrosis which was very apt to involve the bone. In the palm of the hand the two most important of the deep cellular spaces were the middle palmar and the thenar spaces. A collection of pus in the middle palmar space tended to point along the lumbrical muscles of the third, fourth, and fifth fingers; and in the thenar space it tended to point at the radial side of the index finger. A knowledge of the existence and boundaries of these spaces was essential for the early recognition and drainage of a collection of pus in either situation. (*c*) The anatomical arrangements of the tendon sheaths, owing to which any accumulation in them under tension was apt to rupture either into one of the palmar spaces or into the deep cellular planes of the forearm underneath the flexor communis

digitorum, with the frequent sequel of infection of the first interphalangeal joints.

Types of Infection.—These were two: lymphatic and suppurative. In the lymphatic type the infecting organism was almost invariably the streptococcus, and the danger of septicæmia was a very real one. It was vital that a correct diagnosis should be made, as the treatment of such cases differed fundamentally from that of suppurating whitlow. The suppurative type occurred either as a cellulitis, or as a tendon-sheath infection, the former occurring mainly either in the tip of the finger or deep in the palm of the hand, and the latter either as a primary infection of the sheath from a direct wound, or as a complication of a lymphatic infection of a finger. The essential features of tendon-sheath infection were the early development of tension owing to the limited capacity for expansion possessed by the sheath, and the precarious nutrition of the structures within the sheath. A complication which may follow either of these types of infection—cellular or tendon sheath—was infection of the phalanges and interphalangeal joints.

Diagnosis.—The first essential in diagnosis was to decide which type of infection was present. In acute lymphatic infection there was marked constitutional disturbance, slight local swelling, swelling of the axillary glands, and red lines up the arms. In the suppurative type there was either (*a*) a localised swelling at the tip of the finger with tense and tender pulp, or (*b*) a slight prominence of the palm and marked œdema of the dorsum of the hand, with or without a swelling in the cleft between the fingers, or (*c*) a uniform swelling of the finger, flexed position, pain on passive extension and tenderness on pressure over the proximal part of palmar aspect of the finger, or (*d*) a combination of these according to whether or not the tendon sheaths were infected.

Treatment.—Great emphasis was laid upon the importance of prophylaxis in the shape of prompt antiseptic dressing of all wounds, especially in centres of organised industry. Where infection was already present the following principles were to be borne in mind: 1. The necessity for working with and not against Nature in her efforts to localise and limit the spread of infection. 2. The necessity for incising at the earliest possible moment where pus had accumulated under tension. 3. The necessity for making large incisions allowing of free drainage where spreading suppuration was present. 4. The importance of rest to an inflamed part. 5. The necessity for exercising the minimum of interference with the functional capacity of the hand compatible with the arrest and localisation of the infection. During the early stages of acute lymphatic infection no incision was ever to be made. The principles of treatment in these cases were to diminish absorption, to aid local resistance, to combat toxæmia, and, where possible, to give passive immunity. Bier's passive hyperæmia was probably the most valuable therapeutic measure in the acute lymphatic type, other auxiliary remedies being the giving of fluid in large quantities by mouth or rectum, and the subcutaneous injection of large doses (50 c.cm.) of polyvalent antistreptococcic serum.

In suppurative cellulitis early incision with free drainage was always indicated. Two lateral incisions in the finger pulp would completely relieve tension, and, if made in time, would save the phalanx from necrosis. For deep suppuration in the palm it was necessary to make an incision in a cleft between two fingers and to thrust a sinus forceps in along a lumbrical canal. For suppuration in the thenar space, through-and-through drainage of the first interosseous space was essential. In the treatment of nail-fold infections where the pus had already made its way out under the fold, the essential for rapid healing was to pack in strands of gauze between the nail and the fold with the blunt end of a straight sewing needle. In infective teno-synovitis free incision at the earliest possible moment under a general anæsthetic was necessary, a tourniquet in the shape of an Esmarch's bandage to the upper arm being advisable. It was a good rule to make all incisions sufficiently free to obviate the use of drainage-tubes, and so to limit the subsequent fibrosis. The after-treatment included moist dressings and hot saline baths until the subsidence of the acute inflammation. In cellulitis rest should be the rule until there was definite localisation of the infection, after which movement was to be encouraged. In tendon-sheath infections movements, active and passive, were indicated at as early a stage as possible, delay in instituting appropriate exercises endangering the ultimate utility of the hand.

Mr. C. M. PAGE (London) emphasised the importance of the subject from an economic aspect, and insisted that all such patients should be treated as in-patients and not as out-patients. He criticised Wilkie's classification in that lymphatic infections may be more or less chronic, and he preferred to call the severe cases fulminating streptococcal infections. He agreed that in these cases incisions were quite wrong and did a great deal of harm. In other types of infection the main object was to relieve tension by affording an outlet to the pus, and he did not consider the opening up of spaces by forceps advisable, as by this procedure tissues were often infected. The after-dressings were important, and he preferred dry gauze or paraffin gauze to wet dressings. With regard to the restoration of function in these hands, he found that if tendons had sloughed away plastic surgery offered very little hope of success in obtaining functioning tendons, but if the tendons were intact much could be done. He deprecated the common custom of treating these hands on a straight splint, for if adhesions formed it became impossible to get flexion of the fingers. They should always be treated half-way between flexion and extension, and then later full flexion could be obtained, either by graduated extension splinting or by breaking down the adhesions under an anæsthetic. He had found the paraffin bath very useful in the after-treatment of these cases, but he could not explain the rationale of the treatment.

Mr. F. D. SANER (London) thought that not sufficient attention was paid to prophylaxis of hand and finger infections, and he felt that it might be advisable to recommend immediate excision of all wounds and pinpricks. Whenever the patient had the premonitory symptoms the infection had already gained a foothold, and in such cases without actual pus formation he preferred large hot fomentations; and not until grave constitutional symptoms had supervened did he advise incision. He then called attention to the dilemma often confronting surgeons in the condition of the axillary glands. The problem of deciding on the necessity for incising axillary glands was a very difficult one; on the one hand, they formed an important line of defence; on the other hand, if suppurating, they must be opened. He believed that complete immobilisation of the whole limb was a very essential part of the treatment. The formation of pus was to be noted with relief, for pus was an indication of defence, and unless under tension was of no moment. He was not in favour of tubes or packs in his incisions, but he preferred to excise an ellipse of skin and fatty subcutaneous tissue so that drainage was not impeded.

Mr. J. E. H. ROBERTS (London) said that he would confine himself to the infections of the pulp of the finger in the distal part. He showed that in front of the distal phalanx there was a more or less closed area of loose fatty tissue, down to which ducts of glands reached, the gland often lying in this space. Infections of this part of the finger frequently arrived via the ducts without any prick or injury. The arrangement of the vessels was of great importance, for the artery traversed the space, and the blood-supply to the distal phalanx was arranged in this way. The artery supplying the base of the distal phalanx was given off before the artery entered the space, but those going to the shaft and extremity were given off in the space. This explained why it was that the shaft so often necrosed while the articular end survived. The incision he advised was one which completely opened

the space; it was horseshoe-shaped, beginning on one lateral aspect, passing across the tip, and ending on the other lateral aspect. The flap so formed was turned down, and a strip of rubber tissue inserted and the flap replaced. Drainage was rapid and healing perfect. In those cases of acute fulminating streptococcal infections he was not enamoured of hot fomentations, but preferred hot baths for the hand and arm. In cases where the arm became swollen and painful, he thought that a linseed poultice was a very excellent application. In acute teno-synovitis he was entirely opposed to anterior median incisions, and strongly advocated lateral cuts. With regard to the after-treatment, he used hot fomentations for 48 hours, and then used paraffin and flavine dressings. In his opinion there was a widespread tendency to dress too frequently. Early movements were essential, and he agreed with Mr. Max Page that the correct position was one of semi-flexion.

Mr. R. M. HANDFIELD-JONES (London) confined himself to the discussion of the infection of two fascial spaces in the hand occurring as complications in the course of infections of the fingers, these spaces being the middle palmar space and the thenar space. After describing the boundaries and the relations of these spaces he enumerated the avenues of infection.

(*a*) *Middle Palmar Space.*—This might be infected in one of eight ways: from little finger tendon sheath (if not in continuity); from ring finger tendon sheath; from middle finger tendon sheath; from lumbrical canal of little, ring, or middle finger; from rupture of ulnar bursa; from direct puncture wounds; by lymphatic spread; from thenar space.

(*b*) *Thenar Space.*—This might be infected by: index tendon sheath; flexor longus pollicis sheath; middle tendon sheath (occasionally); index lumbrical canal; rupture of radial bursa; direct puncture wounds; lymphatic spread; middle palmar space.

The diagnosis was obviously of great importance, for if left untreated the infection would spread in almost every direction except towards the surface. General symptoms were those common to all severe infections. Local symptoms included: (1) Pain, limited to the area of the space involved. (2) Marked tenderness over the area concerned. (3) Swelling, the location and degree of which was the most helpful point in the diagnosis. In the thenar area where there was no dense fascia the thenar eminence became ballooned out; but in the middle palmar space the dense fascia prevented anything like the same degree of distension, although it was enough to obliterate the normal cavity of the palm. Swelling on the dorsum of the hand was a point of great importance. Every infection in the palm caused swelling of the dorsum, the inflammatory process travelling via the lumbrical canals. Except in direct infections of the back of the hand primary dorsal abscesses were extremely rare. This was an important point to remember, because frequently the dorsal swelling appeared to the untrained eye to be the most prominent feature of the case, repeated incisions being made without any improvement whatever to the hand. In 99 per cent. of cases no incision should be made on the dorsum at all, unless to open the thenar space. (4) Position and movement of the fingers which tended to be semi-flexed but could be moved without pain, thus differentiating the condition from an acute teno-synovitis. Treatment consisted of opening and draining the spaces. The middle palmar space was drained by an incision along one of the three lumbrical canals, the canal most obviously affected being chosen, the tendons exposed, and a pair of artery forceps thrust under them, following the lumbrical muscle. The thenar space was opened by an incision on the dorsum on the radial side of the index metacarpal. The after-treatment consisted of hot dressings for 36–48 hours, followed later by dry dressings with the hand immersed in a radiant heat bath for a period of one hour twice in the 24 hours, and a very early institution of movements of fingers, hand, and wrist.

Mr. G. T. MULLALLY (London) spoke entirely of whitlows of the fingers. He said that anatomically the fingers might be regarded as being composed of three compartments, for the flexion creases of the fingers coincided with fibrous tissue thickenings. In the presence of inflammatory swelling these fibrous thickenings were sufficiently rigid to act as a band strangulating the vessels, and he brought forward the view that the pathology was analogous to that of a strangulated hernia, first the veins being constricted, giving rise to swelling, throbbing and tension, and secondly, the artery being occluded, and necrosis followed. For this reason he was of the opinion that any incision planned to relieve tension in a finger should pass across the next proximal flexion crease to do away with the constriction band. He was still convinced that lateral incisions had no advantages over the anterior median incision which he always practised.

The PRESIDENT said that the surgery of the war had taught many lessons that were applicable to this subject. He thought that of prime importance was the properly placed incision at the earliest opportunity, and he felt very strongly that Willem's mobilisation treatment of infected joints was strongly indicated in septic fingers. Early active movements should be encouraged and maintained. He was convinced that in these cases there was too much splinting and much bad splinting.

Mr. HAROLD BURROWS (Portsmouth) said that he had been worried by septic phlebitis on more than one occasion, and that such complications as metastatic abscesses in hip and knee-joints, &c., were evidence of the presence of a septic thrombosis. He dressed his wounds with a paraffin-flavine dressing.

Mr. M. MAMOURIAN (Ashton-under-Lyne) drew attention to the ugly deformity which resulted after the loss of the greater part of the terminal phalanx, and emphasised the fact that women greatly objected to such an unsightly finger. He was in the habit of inserting an ivory peg exactly the same length as the sequestrated phalanx in such a way that it rested on the base of the phalanx, and was held in position by the flaps of skin being sutured over it. This was a sufficient support to prevent shortening of the flaps until the new bone had regenerated. In the case of the thumb in working men, he advised the insertion of a bone graft, rather than amputation which was the only alternative in certain cases.

Mr. WILKIE briefly replied.

Mr. A. MCCONNELL (Dublin) read a short paper on

Ventriculography,

giving his experiences in certain cases in which he had practised the operation as originally described in America by Dendy. The operation was performed under local anæsthesia, two areas of the skull being exposed. The first site (A), to be used for the injection, was 1¼ inches behind the external auditory meatus, and 1¼ inches above Reid's base line; the second site (B), to clamp the apparatus in position was 1¼ inches behind the external auditory meatus and 2½ inches above Reid's base line. At A the skull was exposed, and a small trephine hole made down to the dura mater; at B only the outer table of the skull was removed in a small circle. A semicircular bar connected the drill end at A, and the pin-holder at B. The pin was screwed tight to the skull, and the whole apparatus then closely applied so as not to shift. At A a perforated metal ball fitted closely to the trephine hole, and through its perforation the cannula was inserted in a straight line with B. The apparatus being thus firmly attached to the head, the patient was removed to the X ray department, and the injection proper begun. Great care was taken that the amount of gas injected was exactly equal to the amount of cerebro-spinal fluid removed. This was done by using a syringe with a two-way tap, sucking out cerebro-spinal fluid first and then injecting oxygen. Mr. McConnell showed excellent radiograms illustrating his results. In all he had performed ventriculography upon 14 cases. Of these five gave no result, and nine gave positive results of internal hydrocephalus, or deformities of the ventricular shadow from tumours,

&c. In two cases out of the 14, sudden death had occurred within 24 hours. In each case the patients appeared well, but suddenly sat up and fell back dead.

FRIDAY, JULY 27TH.

The third day was given up to a discussion on

Anæsthetics from the Surgeon's Point of View

in which both surgeons and anæsthetists took part. The opening paper was contributed by Mr. WILFRED TROTTER, who began by emphasising the necessity for a close and sympathetic understanding between the surgeon and the anæsthetist in order to secure for the patient the full advantages of modern surgery. He pointed out that since many of the most valuable methods of inducing anæsthesia at the present day—such as the various regional and infiltration methods—were definite surgical procedures in themselves there would probably be in the future a closer approximation of the training of the anæsthetist to that of the surgeon, and a more complete assimilation of the anæsthetist into the surgical team. Such an assimilation would probably go far towards solving some of the difficulties that arose in the relation between anæsthetist and surgeon in operations such as those on the face, pharynx, and upper air passages.

It was clear that in spite of the great progress that had been made within recent years in the subject of anæsthesia there was still no single method capable of general application to all cases. In every individual case the choice of an anæsthetic had to be made from a large number of possibilities, this choice frequently involving very careful consideration. He proposed to discuss in his paper only the methods with which he was himself familiar, classifying them in the three groups of inhalation methods, regional methods, and local methods.

1. *Inhalation Methods.*—(*a*) *Ether* was the nearest approach to an anæsthetic of general use, but with all its advantages it had many drawbacks considered from the broad view of the patient's interests. These drawbacks included the over-stimulating effect of the drug on the circulatory and respiratory activities of the patient, adding seriously to the exhausting effect of the operation. It was irritating to the respiratory organs and to the stomach, leading frequently in the immediately post-operative period to coughing and vomiting; and since the most absolute repose was indicated for at least 24 hours after all serious operations, a liability to cause post-operative vomiting should be looked upon as a grave disadvantage in any anæsthetic method. Ether was also contra-indicated in very severe or long operations which were apt to be followed by much shock. Its advantages were, ease of administration, immediate safety, and profundity of anæsthesia. (*b*) *Chloroform.* The numerous disadvantages of this drug included its immediate danger, the relative lack of depth in the anæsthesia produced, its irritant effects on respiratory and gastric mucous membranes, and its capacity for producing the so-called delayed chloroform poisoning. Chloroform was absolutely inadmissible in infants and children in all circumstances; it should not be used for robust and young or middle-aged adults unless specially indicated; nor should it be used for trivial operations or "casual" anæsthetics. Chloroform was also contra-indicated in young people suffering from acute or chronic infections, in patients suffering from malnutrition or starvation, and in diabetics. In spite of all these disadvantages and contra-indications, however, chloroform was valuable and, indeed, indispensable in certain fields. It produced a smooth and placid anæsthesia; it was useful in cases where any increased turgescence in the respiratory tract was to be deprecated; and it was almost absolutely safe when given through a laryngotomy or tracheotomy opening. Although chloroform was not usually admissible in serious abdominal work, it had a great field of usefulness in operations on the mouth, jaw, larynx, and pharynx, and in his own practice this was the anæsthetic employed in all such cases, almost invariably in combination with laryngotomy or tracheotomy. Chloroform was also valuable in many brain and spine operations and for the radical operation for carcinoma of the breast. (*c*) *Nitrous oxide* was incapable of producing a deep anæsthesia in any but delicate or enfeebled patients unless it was supplemented by local or regional anæsthetisation of the part to be operated upon, its efficacy being also increased by preliminary hypodermic injections of morphine.

2. *Regional Methods.*—(*a*) *Spinal anæsthesia* was unsuited to enfeebled patients and to those with acute and serious abdominal conditions. Its special indications were in operations on the lower limbs, perineum, pelvis, and lower abdomen where shock was to be feared; where metabolic disturbances were to be avoided, as in diabetes; and where full abdominal relaxation was essential. Spinal anæsthesia should generally be preceded by narcotic drugs and might usefully be combined with the use of nitrous oxide. (*b*) *Sacral anæsthesia*, in combination with narcotics, was valuable in operations on the perineum, and was specially indicated in operations for piles. (*c*) *Nerve tissue anæsthesia.* Two special forms of this were in common use; the blocking of the intercostal nerves for operations upon chest and abdomen, and blocking of the brachial plexus above the clavicle for operations on the arm. The complementary use of narcotics and possibly of nitrous oxide should always be considered.

3. *Local Methods—Infiltration Anæsthesia.*—The two chief spheres of usefulness for this method were (*a*) in such conditions as superficial, definitely limited dissections, in radical cure of hernia, especially inguinal and umbilical, and in excisions of the testicle: and (*b*) as a special procedure where other methods were urgently contra-indicated. In the hands of the expert it was capable of application to almost any surgical operation save where diffuse infective conditions were present. The main factors for its successful employment included the preliminary use of narcotics, the injection of an abundance of solution, and allowing full time for its action.

Sir W. I. DE COURCY WHEELER (Dublin) said that he would have entitled this discussion, "The Anæsthetist and the Surgeon." He was sure that in the minds of all present the picture was vividly present of an emergency abdominal operation with an inefficient anæsthetist—the rigid muscles, the protruded intestines, the harassed surgeon. He did not suggest that the surgeon was always free of blame, for not all surgeons were gentle, and a ruthless hand under the diaphragm could upset any anæsthetised patient, and again, some surgeons were invariably in too great a hurry to begin. Many things went to make a really successful anæsthesia—viz., a consideration of the nature of the operation, the type of patient, the temperament of the surgeon, and a sound judgment throughout. He asked to make three points especially. First there was the patient who, without any obvious cause, collapsed, stopped breathing, and gave all concerned many anxious moments. In these cases the abdomen was usually opened and perhaps an investigation just commenced. Artificial respiration usually had to be resorted to. He wished to stress the fact that all the ordinary methods could not, and should not, be applied. He advocated very strongly a return to the old direct method, by blowing into the patient's lungs. This should be done rhythmically once every four seconds, and very rarely failed. He quoted the classical early example of direct artificial respiration—viz., Elisha and the widow's son. Secondly, he thought that chest complications ought not to be laid at the door of the anæsthetist, for he thought that the rigidity of the diaphragm had much to do with the onset of so-called ether bronchitis and ether pneumonia. He recalled that the late J. B. Murphy had drawn attention to the incidence of acute pulmonary œdema as a complication of operations for large hernias, &c., and had ascribed it to the want of descent of the diaphragm. In many upper abdominal lesions (especially acute ones) the diaphragm was held

rigid just as the recti were, and for this reason in doubtful cases he thought that the presence of crepitations at the base of a lung was an indication that the condition was an abdominal one rather than a pulmonary. Lastly, he said that for 20 years he had been in the habit of combining local anæsthesia with general, for the abdominal relaxation obtained was far superior and less general anæsthetic was required. He ended by expressing his complete detestation for chloroform.

Dr. A. L. FLEMMING (Bristol) referred to the somewhat prevalent habit of mutual recriminations that occurred between surgeon and anæsthetist, and he was pleasantly surprised that at this meeting he was not called upon to retaliate in kind. But he was quite certain that there was a very great need for a much closer contact between the surgeon and the anæsthetist. Many points arose which could be settled by consultation, but in so many cases the two seemed poles apart and no combined effort was obtained. He was of the opinion that ether was the most satisfactory anæsthetic if the surgery was gentle, rapid, and dry. He considered that the administration of local anæsthetics by anæsthetists was absolutely useless unless a complete accord existed between them and the surgeon. What was the good, he asked, of an anæsthetist inducing a perfect local anæsthesia for the proposed operation, if the surgeon regarded the patient somewhat in the way that the pathologist does a body awaiting a post-mortem examination? He wished to lay stress upon the fact that the teaching of anæsthetics needed great revision, and should be markedly improved.

Dr. A. E. BOYD (Dublin) confined himself almost entirely to colonic anæsthesia. He said that the bad results in this country were due to the use of too high a percentage of ether in the ether oil mixture. He followed Gwathmey's technique very closely except for the mixture. For many months he had used a 50 per cent. ether oil mixture and had had no evil effects. He found it quite safe, very easily controlled, and was followed after operation by a dreamy analgesia. A careful preparation was needed, and consisted of an enema the night before and a rectal irrigation the next morning. The amount to be used must be carefully checked. Of the 50 per cent. mixture he used 1 oz. for each 20 lb. body-weight of the patient. He gave ⅛ or ¼ gr. morphia half an hour before the injection, which had to be given slowly. At least 15 or 20 minutes was necessary for the introduction of the mixture. This mixture did not produce surgical anæsthesia, and here the control came in, for the balance was just tipped over on to the side of surgical anæsthesia by small amounts inhaled from a mask. The period over which the absorption from the large bowel lasted was one and a half hours, so that longer procedures would require rather more inhalation at the end. When the patient returned to bed the colon was washed out, and 2 oz. of olive oil injected. He considered that all head, neck, and breast operations should be done by this method. He also mentioned that all his diathermy cases of the tongue, tonsil, and mouth were done by this anæsthetic.

Mr. A. MCCONNELL (Dublin) said that colonic anæsthesia as described by Mr. Boyd was the best he had known, and he did all his operations upon the neck, brain, breasts, and diathermy by this method.

Mr. CUTHBERT (Gloucester) favoured local anæsthesia for all head cases.

Mrs. DICKINSON BERRY (London) thought that ether anæsthesia if kept light did not produce an undue stimulation, but rather just enough to stand the patient in good stead. She was greatly in favour of combining local anæsthetics with a slight general administration.

Dr. BASIL HALL (Bradford) said that he was all in favour of simplicity in the administration of anæsthetics, and he mistrusted all the modern apparatus with complicated machinery. No hard-and-fast rules were possible, nor was any apparatus of the least value which dealt only with fixed percentages. What he personally wanted was an anæsthetist who was able to judge each patient separately and deal with according to the condition found. Half the battle in operative surgery was to establish a team with an intimate knowledge of each other. He thought that anæsthesia was often pushed quite unnecessarily far. His experience of ethanesal has been most satisfactory, and he now preferred it to all others. He emphasised the fact that for the patient by far the worst part of an operation was the anticipation of the anæsthetic.

Sir CRISP ENGLISH (London) had three remarks to make. First, he had tried ethanesal for two years with admirable results, and this July he had arranged with his anæsthetist to go back to ordinary ether for one month as a control. There was no doubt in their minds that ethanesal was superior in every respect. Secondly, he advocated the induction, especially in children, by ethyl chloride. The induction is very rapid, and all the long struggling excitable period was omitted, and he thought that in children this was exceedingly valuable. Lastly, he thought that in the hands of such experts as Mr. Boyle, gas and oxygen was an extremely useful anæsthesia, and there were many cases which were safely dealt with by it which would not stand a more toxic drug.

Prof. C. A. PANNETT (London) drew attention to a condition of delayed ether shock which was not infrequently seen after ether anæsthesia. He mentioned cases leaving the table in good condition only to be in a condition of severe collapse three hours later. He did not find it possible to acquit the anæsthetist of all responsibility for lung complications, though he liked Sir W. I. de Courcy Wheeler's explanation of such cases. And lastly, and most important, he had been attempting lately at St. Mary's Hospital paravertebral nerve-block anæsthesia with good results. The technique was not yet perfected, but it was being made so; he had already done partial gastrectomies, cholecystectomies, &c., under paravertebral anæsthesia.

Mr. TROTTER briefly replied.

Mr. CLIFFORD MORSON (London) read a short paper in which he explained his method of, and reasons for, division of the vasa deferentia in operations upon the prostate.

SECTION OF PUBLIC HEALTH.

THURSDAY, JULY 26TH.

THIS section, which met on two days, was presided over first by Dr. A. MEARNS FRASER (M.O.H., Portsmouth) and then by Dr. LOCKHART STEPHENS (M.O.H., Warblington U.D.). A discussion on factors contributing to the

Recent Decrease in Infant Mortality—

Are such factors likely to be permanent or temporary?—was ably opened by Dr. J. WHEATLEY (M.O.H., Salop). His main conclusion was that the fall of the infant mortality-rate had been due chiefly to education. The earlier part of the fall was probably due to the operation of the Education Act of 1870 in increasing the intelligence of the people and the sense of responsibility of parents. One would not expect an immediate effect from the Education Act but rather an effect delayed for about a generation, and that was what had actually happened, the fall having begun in 1900. The latter part of the fall was probably due to the continued effect of better general education, aided by special education influences, brought to bear more particularly on the mothers, such as by child welfare, tuberculosis and school medical inspection schemes, and by the establishment of district nurses.

Dr. Wheatley's paper was illustrated by tables and charts showing infant mortality rates from 1840 onwards, giving the dates of introduction of various measures likely to affect it. The various possible factors were discussed. The fall in the birth-rate began in 1880, but up to 1900 had not improved infant mortality. The same could be said of the improved sanitation which followed the passing of the Public Health Act of 1875 and coincided with a con-

siderable fall in the general death-rate. The great increase in prosperity and in the purchasing power of the wage which took place in the latter part of the nineteenth century had no effect; in fact, the evidence went to show that improvement in wages without improvement in education and standards of conduct resulted on the whole in more drunkenness, a greater carelessness, lessened natural feeding of infants, and a consequent increase in infant mortality. From 1840 to 1900 the purchasing power was trebled, with no reduction of infant mortality, while from 1900 to 1913 there was a slight decline in purchasing power with a very large reduction in infant mortality.

The removal of slums had been on too small a scale to be an important factor. From 1914 to the present time there had been a cessation of sanitary schemes, a marked deterioration of housing, and a lessened efficiency of sanitary administration, accompanied, nevertheless, by a very marked diminution of infant mortality. He (Dr. Wheatley) did not wish to belittle such important matters as the pollution of the air by smoke, overcrowding, and bad housing, but these were only very specially potent when combined with ignorance and carelessness, and it was this combination which caused the high rates in northern industrial towns. He believed with Dr. Brend that air pollution caused an excess of infant mortality, but there had been no improvement in this respect to account for the reduction in the latter. He did not think the decline was due to an improved milk-supply, in rural districts at any rate, or that the use of dried milk had been sufficiently general to be a large factor.

Ante-natal work was more a thing of the future and had not appreciably affected neo-natal mortality as yet. There was no evidence that the improvement was due to a change in climatic conditions. Between the census of 1901 and that of 1911 there was an increase in the number of married women industrially employed and the figures for 1921 were not yet published. Lessened horse traffic and tarred roads meant fewer flies and more open windows, and had no doubt been among the minor contributory factors. As regards the future, he thought the improvement would be permanent and progressive. If the fall had been due to mild winters or periodicity of infectious diseases, we might have real set-backs, but there was nothing pointing to this, and apart from temporary set-backs caused by epidemics of influenza, measles, whooping-cough, &c., the improvement, in his opinion, would be progressive as long as education kept ahead of material advancement.

In the discussion which followed Dr. H. PECK (M.O.H., Chesterfield R.D.) agreed generally with Dr. Wheatley, but thought privy conversion was one sanitary measure which had had an effect. He also instanced the good effect of "Summer Time" and the cleaner air during the coal strike. Dr. H. B. BRACKENBURY (London) was sceptical as to the good results of maternity and child welfare work. He thought the low mortalities in Connaught, mentioned by Dr. Wheatley, were remarkable, and he suggested the tabulation of districts according to their varying conditions. Dr. D. C. KIRKHOPE (M.O.H., Tottenham) thought the education of the mother in her home was the most important form of education and that the work of the centres was vital. Dr. G. C. TROTTER (M.O.H., Islington) thought home visitation was *the* thing. It was not only the primary education that had been important but the educative effect of working-class movements which operated all through life. Dr. J. W. MILLER (M.O.H., Radnorshire) thought education by health visitors had been important by encouraging breast-feeding. Education in domestic hygiene in schools was not practical. Education in the homes and by centres was extremely important. Dr. G. HARPER PEARCE (M.O.H., Batley) said smoke had increased as infant mortality decreased. Education of the mothers and the use of dried milk had been the chief causes of the decrease. Dr. W. A. BULLOUGH (M.O.H., Essex) thought the district nurse-midwives had been important educators. Dr. H. SCURFIELD (late M.O.H., Sheffield) said the Irish Carnegie report emphasised the freedom of the Connaught mothers from venereal disease and abuse of alcohol. It was also possible that a religion which placed motherhood high had maintained its hold on a population undegraded by the agricultural and industrial revolutions which occurred in England during the reign of George III. He was in general agreement with Dr. Wheatley but attributed more importance to the use of dried milk, and mentioned the opinion of the late Dr. Ewart that the increasing use of a safe milk had been the chief factor. The teaching of housecraft was considered important by many, but always suffered if the Education Committee's estimates had to be cut down. The new midwifery would produce an effect on neo-natal mortality when it got going. Prof. F. E. WYNNE (M.O.H., Sheffield) said an investigation made by him recently showed that most of the Sheffield infant mortality reduction was in diarrhœal diseases. His belief was in the special education of the mothers. The teaching of domestic hygiene in the schools was not a practical form of education.

Dr. WHEATLEY, in replying, said he had limited himself to those factors which, in his opinion, had had a possible effect in causing the decrease in infant mortality. Heredity was obviously not one of these. He could not understand anyone minimising the effect of education. In reply to Dr. Brackenbury he thought the maternity and child welfare schemes had produced a great and immediate effect as contrasted with the delayed effect of improved general education.

Dr. SCURFIELD read a paper on

The Value of Watercress

as a food, and suggestions for its extended use, which evoked considerable interest. In his preliminary remarks Dr. Scurfield drew attention to the proved importance of a vitamin-rich diet not only for laboratory animals but for animals such as pigs, poultry, and dogs kept under ordinary conditions, and the obvious inference that the same held good for human beings if they wanted to be at their best. There was just the danger that people would get sick of the talk about vitamins before they had absorbed the comparatively simple teaching of the newer nutrition—viz., that they needed to include more of the "protective foods"—i.e., milk, green vegetables, and fruits—in their dietaries. Watercress was a green food which had stood the test of time and had a great reputation as a promoter of health. It was certainly, like other cruciferæ, a valuable antiscorbutic. It probably also contained the other two vitamins. He hoped research would be undertaken both as to its chemical and vitamin content. It was a green vegetable, which, like lettuce, was eaten unspoiled by cooking, but which, unlike lettuce, was available all the year round at a moderate price. If there was to be an extended use of it inspection of the sources of supply was desirable. Such inspection would be welcomed by the large growers, who from his experience took great care at the present time with respect to purity of water, &c. In his experience most people, including children, liked it, but many only met it in railway dining cars or as a garnish to chicken, &c., in a restaurant. It was much more used in France, and in his belief its more extended use in this country would be useful in correcting errors in our dietaries due to urbanisation.

FRIDAY, JULY 27TH.

The second day's proceedings opened with a discussion on the

Effect on Health of Sewer Air and Drain Air,

introduced in an interesting paper by Prof. WYNNE, the gist of whose paper was to the effect that the theory of the harmful results caused by sewer and drain air was founded on quite unsatisfactory evidence. Actual infection of human beings by pathogenic micro-organisms carried from the sewage by sewer or drain air was now considered practically impossible, but the theory founded on very flimsy evidence that the inhalation of sewer or drain air lessened the resistance to infection remained.

In the discussion which followed there was a considerable amount of agreement with Dr. Wynne that too great importance had been attached to the harmful effects of sewer and drain air in the past, but the general opinion seemed to be that more research should be undertaken and that we must move cautiously till the subject is better understood. Dr. MEARNS FRASER mentioned that many practitioners attached importance to defective drainage as a cause of certain diseases. He asked why polluted soil did harm if drain air was harmless. Dr. A. WYNTER BLYTH gave the results of experiments conducted by him on the conditions under which micro-organisms can be discharged from sewage into the air. He had experimented with froths, bubbles, and splashes, and had found that a bursting bubble could only throw a micro-organism a distance of 4–6 inches. Whether a micro-organism so thrown could be carried along in a draught of air depended upon whether it was nude or covered with liquid. If nude it might be carried some distance in a light draught. Dr. Blyth advocated further research and that conclusions be not hastily accepted. Dr. SCURFIELD also favoured further research. It would be necessary to convince the Ministry of Health and its architectural department before by-laws could be altered. He had for 20 years advised his health committee that such diseases as typhoid fever and diphtheria could not be caught from drain or sewer air, but that health might be lowered by their inhalation so as to lessen resistance to infection. If drains were not watertight, leakage of sewage into or under the foundations of a house might go on for a considerable time without being spotted. Dr. A. MANKNELL (Bradford) mentioned the widespread belief aroused in the mind of the public by such books as Mr. Teale's, and pointed out that it was very necessary for the general practitioner to have a lead if there was to be a change of front. Dr. J. A. R. GLENNIE (Singapore) thought that the harmful effects put down to drain air might be due to rats. Many other speakers spoke as to the need for caution.

Prof. WYNNE, in replying, said he regarded sewage-polluted ground as a distinct danger. Traps were necessary to make drains rat-proof. Comparing drains with privies, the danger from a privy was not due to the smell, but to flies and the fouling of the streets at emptying times. Medical officers of health required guidance in this matter from scientific research workers like Dr. Blyth. He did not wish to be dogmatic, but we ought not to be satisfied with the vague idea that drain or sewer air lowers health and so causes disease.

Dr. E. B. HAZLETON (Sheffield) followed with a paper on the effect of long-continued inhalation of small doses of

Coal Gas in Causing Ill-health,

and especially in predisposing to tuberculosis. Since his attention had been drawn to the matter he had found that small leakages of coal gas were very common owing to defective construction of the taps. The taps which were at fault were those with stop-cocks at the bottom of the pipe. He had remedied the matter in his own house by adopting a catch which secured a gas-tight tap when the gas was turned off. He attributed the mischief to carbonic oxide, and had found that a leakage, quite insufficient to arouse attention by the characteristic smell, would at the end of the night give rise to a percentage of carbonic oxide in the bedroom, easily detectable by chemical analysis. He believed that the exposure to such air produced headache, anorexia, &c., and ultimately anæmia and he had had several striking cases in which tuberculosis was the ultimate result.

In the discussion which followed most of the speakers agreed that the matter was important and that there was much negligence on the part of householders in securing gas-tight fittings, and the hope was expressed that medical officers of health would follow up this question with a view to seeing if leaky gas taps are as common in their districts as in the experience of Dr. Hazleton.

EXHIBITION OF INSTRUMENTS, DRUGS, FOODS, AND APPLIANCES.

We have already commented on the excellence of the exhibition of surgical instruments, appliances, drugs, foods, and other objects which was held in the gymnasium of the Royal Naval Barracks at Portsmouth from Tuesday, July 24th, until Friday, July 27th. In the summary which follows notice is taken of exhibits presenting some new feature, the number of the stand being given for reference in square brackets.

SURGICAL INSTRUMENTS AND APPLIANCES.

The exhibit of surgical instruments, general and special, was particularly full and instructive. [52] John Bell and Croyden, Ltd., incorporating Arnold and Sons (50, Wigmore-street, London, W. 1): showed operating tables and hospital furniture, finished with a special non-chip enamel. Prominence was given to operation and accouchement outfits, to sterilised dressings, and to the "Marylebone" series of sutures and ligatures.—[63] Down Bros., Ltd. (21, St. Thomas's-street, London, S.E. 1): a large selection of new instruments, introduced and modified from existing patterns at the suggestion of operating surgeons, including Albee's instruments for bone grafting, Childe's hernia director and finger guard, Mott's dosimetric intratracheal anæsthesia apparatus, Carruther's saline infusion apparatus with unbreakable vacuum flask, and blood-urea instruments.—[36] The Genito-Urinary Manufacturing Company, Ltd. (66, Margaret-street, London, W. 1): the latest cystoscopes by Thomson Walker, Joly, Kidd, Andrews and Gordon, with urethroscopes by Joly, Powell, Kidd, Harrison and Young, also suprapubic drainage apparatus by Eynard, of Paris.—[65] The Holborn Surgical Instrument Co., Ltd. (26, Thavies Inn, London, E.C.): besides general surgical instruments and hospital furniture, a selection of glass and enamelled ware, a very complete assortment of midwifery bags, and an interesting collection of diagnostic apparatus, including the Holborn "pantoscope" for ear, nose, and throat examination, with additional attachments for trans-illumination of the frontal sinus and examination of the fundus oculi.—[17] Mayer and Phelps (59, New Cavendish-street, London, W. 1): a selection of instruments of original design for general and regional surgery, including the Revel-Moseley electric rotary pump for pressure and suction, available for removing blood and secretions from the operation area and for aspirating the chest and evacuating cysts. Among the intruments were Gillies's instruments for plastic surgery, Platt's chisels for operating in osteo-arthritis, and Walton's support for ptosis and after abdominal section.—[38] John Weiss and Son, Ltd. (287, Oxford-street, London, W. 1): a selection of instruments for use in general and ophthalmic surgery, calling particular attention to a new shadowless lamp for operation purposes.

Among the special instruments:—[29] "Acoustique" (95, Wigmore-street, London, W. 1): the "aid to hearing" in 25 distinct types as well as the acoustique stethoscope for doctors suffering from deafness, and an installation to enable deaf members of a congregation to hear the service.—[3] H. E. Curtis and Son, Ltd. (8, Old Cavendish-street, London, W. 1): various forms of abdominal belt and support, including an arrangement for colostomy, as well as "colonol," a liquid paraffin of Russian origin with a S.G. of 0·885 and viscosity of 295 to 300 secs. at 100° F.—[11] The Dowsing Radiant Heat Co., Ltd. (91, Baker-street, London, W. 1): the latest form of apparatus for radiant heat treatment by apparatus which is supplied on hire to medical men and institutions for any length of time.—[28] Horace V. Duncan (117, Commercial-road, Portsmouth): a number of original designs in artificial limbs, the "Victor" models being especially light in weight as well as silent and perfect in movement.—[19] Lindsay and Sons (7, Commercial-road, Portsmouth): abdominal belts, electric trusses, artificial limbs, appliances, and dressings as supplied to the Royal Portsmouth Hospital.—

[6] Watson and Sons (Electro-Medical) Ltd. (43, Parker-street, Kingsway, London, W.C. 2): the "Sunic" X ray outfit for private practitioners and cottage hospitals, an oil immersed transformer type employing a 30 milliampère Coolidge tube in conjunction with a combined couch and screening stand.—[9] X Rays Limited (11, Torrington-place, London, W.C. 1): the latest design of combined couch and screening stand, affording complete protection for Coolidge tube to comply with the standard set up by the X Ray and Radium Protection Committee. The ends of the box are covered with 9 mm. lead rubber, the sides with 3 mm. of the same, and outside all is a layer of 3 mm. of metallic lead.

Besides those firms mentioned as supplying dressings:—[33] Antiphlogistine (Denver Chemical Mfg. Co., London, E. 3): the well-known product in the nature of a hygroscopic antiseptic poultice, non-irritating and non-toxic, keeping well in any climate and ready for immediate use.—[14] The Thermogene Company, Ltd. (Haywards Heath, Sussex): A scientifically prepared cotton-wool impregnated with stimulating medicinal essences adapted for use as an analgesic and counter-irritant.

DRUGS AND PHARMACEUTICAL PREPARATIONS.

The collection of drugs and pharmaceutical preparations was large and representative:—[2] Allen and Hanburys, Ltd. (37, Lombard-street, London, E.C. 3): therapeutic sera and vaccines issued by the Lister Institute, as well as a number of organo-therapeutic products, insulin, A.B. brand (manufactured jointly with British Drug Houses, Ltd.), a complete range of group-test protein solutions to be used in the diagnosis of hay fever, urticaria, &c., an efficient spirochæticide in the form of novarsan, and "butyn" a new local anæsthetic not coming within the scope of the Dangerous Drugs Act. The same firm also showed surgical instruments and appliances.—[69] Anglo-French Drug Company, Ltd. (238a, Gray's Inn-road, London, W.C. 1): special pharmaceutical preparations such as diabetylin for the treatment of diabetes without the withdrawal of carbohydrates, dimol, the intestinal disinfectant introduced by Captain Ainslie Walker; galyl, an arsenical compound for syphilis, approved by the Ministry of Health, and neo-trepol, an anti-syphilitic containing 96 per cent. of bismuth in isotonic medium.—Modern Pharmacals, Ltd. (2, Calthorpe-street, London, W.C. 1): glucarsenol, a solution of novarsenobenzol in glucose with analgesics, in ampoules ready for use.—[45] Bayer Products, Ltd. (1, Worple Way, Acton Vale, London, W.): a large collection of synthetic drugs, among them adalin, a hypnotic and sedative, for use in neurasthenia, cardiac neuroses and pertussis, luminal and luminal-sodium, sedatives in epilepsy, chorea and drug habit, novaspirin, protargol, sajodin, tannigen, veronal, and a preparation designed to stimulate fibrosis in tuberculous conditions, known as guycose, being a 5 per cent. solution of guaiacol-calcium-sulphonate in liquid somatose.—[67 and 68] John Bell and Croyden Ltd.: a display of "ramul" and "ramulettes," the ready-for-use barium meal in X ray diagnosis, B and C brand of lysol, and "malobin," a children's tonic, being a combination of colloidal iron, red bone-marrow, and malt extract.—[12] Boots Pure Drug Company, Ltd. (Nottingham): a large assortment of synthetic and medicinal chemicals, including acriflavine in crystalline form; stabilarsan, being a stable combination of salvarsan and glucose; alanin, uradal and others; compressed tablets of medicinal drugs and chemicals; solution tablets in distinctive form for external application; flexible capsules and pastilles.—[47] C. J. Hewlett and Son, Ltd. (35, Charlotte-street, London, E.C. 2): a series of original preparations, including deliciol, a soft paraffin for intestinal lubrication, iodermiol, a non-staining preparation of iodine, physiologically standardised tinctures of ergot, digitalis, cannabis indica, scilla and strophanthus, and a hypnotic, somnogen, an opium preparation free from disagreeable after-effects.—[40] Newton, Chambers and Co., Ltd. (331, Gray's Inn-road, London, W.C. 1): izal disinfectants, powders, soaps, along with mechanical sprayers.—[42] Oppenheimer Son and Co., Ltd. (179, Queen Victoria-street, London, E.C. 4): palatinoids and pulverettes, a series of colloids known as "oscols," standardised both microscopically and bacteriologically, roboleine, a reconstructive food for infants and invalids, and "pinheroin," a combination of terpene, heroin, and Canadian pine for use in laryngitis and chronic bronchitis.—[66] Parke, Davis and Co. (50, Beak-street, Regent-street, London, W. 1): pharmaceutical preparations including adrenalin gauze tape, medicinal peptone for use in cases of hypersensitiveness, mercurosal, a soluble organic mercury for injection, and protein extracts for diagnosis in more than 100 forms; also bacterial vaccines prepared at St. Mary's Hospital and antidiphtheritic serum of high concentration.

A number of special pharmaceutical preparations were shown. [81] The Anglo-American Oil Co., Ltd., Albert-street (Camden Town, London, N.W. 1): nujol, an intestinal lubricant of undeviating standard of viscosity; miscol, a solution of menthol, camphor, and eucalyptol in liquid paraffin for use in an atomiser in catarrhal affections and hay fever.—[56] Armour and Company, Ltd. (Queen's House, Kingsway, London, W.C. 2): digestive ferments, glandular preparations, and a glycerine extract of red bone marrow.—[41] G. W. Carnrick Co.'s standardised gland products (American Drug Supply Co., Ltd., 40, Lexington-street, London, W. 1): a series of organo-therapeutic products, selected from the glands of healthy food animals, such as hormotone for menstrual and menopausal disorders, trypsogen for diabetes mellitus, secretogen for gastro-intestinal disorders, and kinazyme in malnutrition.—[78] The Crookes Laboratories (22, Chenies-street, London, W.C. 1): along with other colloidal products, the recently introduced collosol-calcium for use in tuberculosis, malnutrition, and chronic sepsis, and collosol-kaolin in the treatment of intestinal toxæmia.—[20] The Danish Medicinal and Chemical Co., Ltd. (John Morgan Richards and Sons, Ltd., 46, Holborn Viaduct, London, E.C. 1): a concentrated pepsin-extract prepared and standardised by Dr. Ege, of Copenhagen University, citric acid tablets for achlorhydria, and various soft-mass pills containing an assimilable form of iron known as ferrolyt.—[13] J. C. Eno, Ltd. (Victoria Embankment, London, E.C. 4): a well-known effervescent saline laxative to assist in correcting some of the inevitable consequences of a civilised and artificial life.—[34] Genatosan, Ltd. (Loughborough): sanatogen, a true organic compound of casein and sodium glycerophosphate; genasprin, a pure form of acetyl-salicylic acid, cystopurin, and detoxicated vaccines including protein fractions of various bacteria.—[48] Jeyes' Sanitary Compounds Co., Ltd. (64, Cannon-street, London, E.C.): preparations of cyllin, characterised by high bactericidal power and slight toxicity, including inhalation, capsules, pastilles, dusting powder, and surgical soap; also Jeyes' lysol (jeysol), for use when a clear solution in water is required.—[44] The Chas. H. Phillips Chemical Co. (179, Acton Vale, London, W. 3): milk of magnesia, an antacid containing not less than 26 fluid grains of magnesium hydrate to the ounce, for use in milk modification and as a mild aperient; phospho-muriate of quinine compound, being an aromatic syrup for use as a general and nerve tonic.—[83] The Sandoz Chemical Co., Ltd. (Canal-road, Bradford): scillaren, being the cardiotonic glucoside of squill in tablets and ampoules; femergen, a new preparation of ergot free from unpleasant taste or smell; felamine, a combination of biliary acids of ox gall and hexamine for affections of the biliary system.—[82] Savory and Moore, Ltd. (143, New Bond-street, London, W. 1): the well-known food containing vitamins and approximating closely in composition to human milk; a new anæsthetic, ethanesal, containing ketones treated with CO_2 and ethylene dissolved in ether, and the fructole series of pharmaceutical preparations flavoured with a fruit base.—[23] The Semprolin Company, Limited (18, Leather-lane, London, E.C. 1): an emulsion containing

60 per cent. of paraffin oil of high viscosity; a special emulsion for infants with addition of carminatives known as carmex, and O.T.P., an oxygenated tooth-powder with a soluble base giving off nascent oxygen when moistened.

Toilet preparations were shown by several firms.

[43] D. and W. Gibbs, Ltd. (Wapping, London, E. 1): superfatted soaps for tender and sensitive skins, various kinds of medicated soap, dentifrice, and dental cream.—[58] Kolynos Incorporated (Chenies-street, London, W.C. 1): an antiseptic dental cream capable of destroying pathogenic bacilli in the mouth as well as in vitro with no grit to abrade the enamel.—[55] The Pepsodent Company (42, Southwark Bridge-road, London, S.E. 1): a mildly acidic dentifrice containing acid calcium phosphate, stimulating the flow of saliva and removing mucin plaques, the polishing agent being tri-calcium phosphate.

(*To be continued.*)

Obituary.

FLORA MURRAY, C.B.E., M.D., B.S. DURH., D.P.H. CAMB.

Dr. Flora Murray, who died in London after a short and unexpected illness on July 28th, will be remembered for her large share in founding and maintaining the Women's Hospital Corps.

Flora Murray came from Dumfriesshire where her family have lived for over 500 years. Her father was Commander John Murray, R.N., of Murraythwaite, and her brother, the late Major Murray, was M.P. for Dumfries county. A student of the London School of Medicine for Women and of the College of Medicine, Newcastle-upon-Tyne, Dr. Murray graduated in medicine and surgery at Durham in 1903, proceeded to the M.D. degree in 1905, and a year later took the D.P.H. at Cambridge. Among the various appointments which she held after qualification were those of assistant physician to the Crichton Royal Institute, Dumfries, clinical assistant at the Belgrave Hospital for Children, and anæsthetist to the Chelsea Hospital for Women. She entered upon general practice in Kensington, throwing herself into her professional work with characteristic energy and devotion. In 1911 she founded a hospital for children in the Harrow-road, consisting of an out-patient department which extended rapidly, and of a ward of 12 beds. It was her hope later to build and to raise an endowment for an adequate hospital as a training centre for medical women in children's medicine. But the war intervened and expansion proved impracticable. Greatly to her regret, and that of the committee which she had gathered round her, the hospital was closed in 1921, after having done valuable work for ten years. The money collected for the hospital, mainly by her own efforts, amounted to £31,000, and has now in large part been vested in a trust under the name of "The Sea and Sun Club" for providing holidays and convalescent treatment for children of the neighbourhood.

A few days after war broke out in August, 1914, Dr. Murray offered her services first to the British War Office and then to the French Red Cross, and with other medical women she organised a women's unit for service in France. During the first six months of the war she helped to collect funds for and commanded two voluntary hospitals, each of 100 beds, first at the Hotel Claridge in Paris and then at Wimereux, near Boulogne. In 1915 Sir Alfred Keogh, Director-General of Medical Services, offered her the command of a larger military hospital in London and, from this time, the Women's Hospital Corps served under the British War Office. St. Giles's Workhouse, Bloomsbury, was placed at her disposal and, with the rank of lieut.-colonel, Dr. Murray became doctor in charge of the Military Hospital, Endell-street, with 600–700 beds, in addition to two auxiliary hospitals in the vicinity of London. The story of this admirable work is told with modesty and humour by Dr. Murray herself in "Women as Army Surgeons" (Hodder and Stoughton).

Her friend and colleague, Dr. Louisa Garrett Anderson, writes: "Dr. Flora Murray shared the pride and the humility, the traditions, and the love of country which are the inheritance of an old family. She was singularly fitted for the rôle of wise physician. Reticent and tactful, with wide sympathy and good judgment, grace of mind and body combined to give her a place in many hearts and her practice grew. She believed in youth and she gathered round her at Endell-street a company of young women and girls who justified her pride by their beauty and ability, and the fidelity with which they discharged the tasks she committed to their care. She had the

From a portrait by Mr. Francis Dodd.

DR. FLORA MURRAY.

power to lead women and to call out in others courage and self sacrifice equal to her own.

"No account of Dr. Flora Murray would be complete without reference to the part she took in the struggle for the emancipation of women. Inevitably, she was a suffragist and, as inevitably, when she deemed militancy necessary, a militant suffragist. She was an admirable committee member, a good public speaker, and a keen politician. Her sympathies were strong and tender—for animals, for children, for working women, indeed for all women in their aspiration for freedom and opportunity; and the 32,000 men who passed through her hands during the war received their share of consideration and comradeship."

Dr. Flora Murray died in her fifty-fourth year. The funeral took place at Penn Church on August 1st, when a personal address was given by the Rev. William R. Rice, of the West London Mission, who during the war had acted as Wesleyan chaplain to the Endell-street Hospital. Sir William Leishman, D.G.M.S., represented the War Office, and the large gathering of friends included representatives from the

Royal Free Hospital, the Elizabeth Garrett Anderson Hospital, the London School of Medicine for Women, the London Association of Registered Medical Women, the Women's Freedom League, and the West Islington Infant Welfare Centre. A number of the women who had worked under Dr. Murray as orderlies and nurses also were present.

WALTER WILLIAM CHAMBERLAIN, M.D., C.M. EDIN.,

MEDICAL OFFICER OF HEALTH, RAWDON URBAN DISTRICT, YORKS.

Dr. W. W. Chamberlain died suddenly at his residence in Rawdon on July 28th. On the previous night he went to bed in his usual health, but towards morning he had a heart seizure and died suddenly afterwards. Dr. Chamberlain was a graduate of the University of Edinburgh and in his younger days was a noted athlete, being also at one time tennis champion of the South of Scotland. Graduating M.B. in 1887, he was subsequently house surgeon at the Royal Infirmary, Birmingham, and senior house surgeon at the Halifax Infirmary. Twenty-seven years ago he settled at Rawdon, where his abilities secured for him an extensive practice, and where for many years he was medical officer of health for the township. His efforts were intimately associated with the interests of the Rawdon Convalescent Home and the Mitchell Memorial Home. Some months ago overwork brought on a breakdown in health, from which he appeared to make a quick recovery, but he died at the relatively early age of 62. Dr. Chamberlain leaves a widow, two sons, and a daughter; their loss will be widely shared by all who came into contact with his wisdom, kindliness, and courtesy.

ANDREW STEWART, L.R.C.P. EDIN.,

CONSULTING SURGEON, BIRKENHEAD BOROUGH HOSPITAL.

By the death of Dr. Andrew Stewart on July 30th, at the age of 69 years, Birkenhead has lost an able and popular medical practitioner. Dr. Stewart received his medical education at Liverpool University and at St. Bartholomew's Hospital, graduating in 1881. For ten years or more before his death he had suffered from chronic myocarditis, but did not allow his disability to interfere with his work or pleasure. He had long recognised that his death would be abrupt, and spoke freely of it with great sang-froid; the end came very suddenly as he sat at his desk writing a letter; he died as he lived, beloved and respected by all who knew him. Dr. Stewart took a great interest in his professional work, was a diligent reader of the medical journals, a man of wide general culture, and fond of sport, particularly of boating and golf. He leaves a widow, son, and daughter to mourn their loss. His brother, Mr. Gershom Stewart, is a well-known Member of Parliament.

THE King has sanctioned the promotion from Hon. Associate to Knight of Grace of Surg. Lieut.-Colonel Evan Evans, T.D., in the Order of the Hospital of St. John of Jerusalem in England.

BLENDING BUTTER AND MARGARINE.—An important case relating to the blending of butter and margarine was decided at the Salford Police Court on August 1st. The defendants were the Ballochmyle Creamery Co., Ltd., of Ayrshire. The prosecutor proved that a sample of the blend bearing the label "Ayrshire margarine rolls blended with pure butter," for which an inspector had paid 1*s.* a pound, contained only 1 per cent. of butter, the prosecution contending that notwithstanding the description, the article was nothing but margarine and should have been sold as such. It would appear that legally, while it is permissible to mix with margarine butter not exceeding 10 per cent., the article even in that case had to be sold as margarine. The general price of margarine in Salford where the sample was bought was 6*d.* per pound, and on the specific date butter was 1*s.* 4*d.* per pound. The stipendiary magistrate said that 1 per cent. of butter was not sufficient to make him think that it was fair to the purchaser, and imposed a fine of £20. Leave to appeal was granted.

Correspondence.

"Audi alteram partem."

MEDICAL CHARITIES.

To the Editor of THE LANCET.

SIR,—The remarks of the treasurer of the British Medical Association at its annual meeting, reported in your last issue (p. 229), will, I hope, bring home to the medical profession the needs of the Royal Medical Benevolent Fund. Dr. G. E. Haslip's comments call for some reply, and especially for information as to the efforts that are being made by the committee of management to increase the income of the Fund. Dr. Haslip is (as he stated) a member of this committee and as such has a voice in the management. It is a matter of regret that owing to his many engagements and his recent illness he has not been able to attend as often as we could wish. The Medical Agency, of which Dr. Haslip is chairman, has contributed most handsomely to the Fund. These gifts have been acknowledged with gratitude not only by the committee of management and in the medical press, but by special letters from the treasurer.

The subscriptions collected through the medium of the Association amounted last year to £800. Moreover, through the kindness of the Editor of *The Lancet* and the Editor of the *British Medical Journal*, a summary of grants made is published monthly. Those who read their journals cannot but be informed of the existence and the needs of the Fund. The conference to which Dr. Haslip refers took place in 1922 at the request of the officials of the British Medical Association and was attended by representatives of Epsom College and of the Royal Medical Benevolent Fund. Dr. Haslip proposed that the two bodies should be amalgamated and that there should be a central bureau for the collection of subscriptions.

This proposal did not meet with the approval of either body as it involved the abandonment of organisations, metropolitan and provincial, for the collection of funds that had been built up by years of patient endeavour, without any sufficient assurance of their adequate replacement—and in the case of Epsom College there was the additional objection that such action would tend to restore to the College as a whole, which is a general public school of the ordinary type, a charitable aspect, that had been proven to be harmful to the College, as well as to the medical foundation incorporate in it, and which some 30 years ago was an important factor in inducing the council of Epsom College to obtain an amending Act of Parliament. It was felt also that the aims of Epsom College and the Royal Medical Benevolent Fund were essentially distinct, in that the former existed primarily for educational, the latter exclusively for charitable purposes. Seeing that so far as the Fund was concerned some 20,000 members of the profession do not belong to the British Medical Association it was considered wiser to remain free to appeal from one centre to the profession as a whole. This proposal would, moreover, entirely disorganise the present system of collecting subscriptions through local secretaries which adds a personal and sympathetic touch of no little value.

Dr. Haslip's effort in the cause of education and of charity was cordially appreciated by both bodies, and I hope will not be lost upon the profession. That the executive have not been idle in developing new ideas and methods during the last few years, the following brief account will indicate and will go some way, I hope, to remove the impression of apathy conveyed in Dr. Haslip's remarks. It is an error into which he could not have fallen had he been in closer touch with the management. During the last two years special appeals have been issued in the following towns: Bath, Birmingham, Bolton, Bristol, Bromley, Birkenhead, Bury, Cambridge, Cornwall, S. Wales and Mon., Surrey, Devonshire, Bootle, Manchester,

Portsmouth, Buxton, Burnley, Weybridge, Watford, Sutton, Enfield, Blackburn, Altrincham, and similar appeals are being prepared for other towns this autumn.

Realising that printed matter is often thrown in the waste-paper basket unread, the various local secretaries have been asked to write out an appeal which has been reproduced, a stamped envelope is addressed to every non-subscriber, and sent to the local secretary who completes the letter by inserting the name. The reply is returned to the office or the local secretary as the latter desires. In some cases an addressed stamped envelope is enclosed for reply. Up to the time of writing over £400 in new subscriptions, largely in bankers' orders, have been received this year and replies are still coming in. Not only have these undertakings been initiated by the hon. secretary, Dr. Newton Pitt, but owing to the illness of the secretary the bulk of the work has fallen upon him. The festival dinner in 1913, at which £3197 was raised, at least informed the profession, the entire body being circularised of the existence and needs of the Fund. Taking the last two decennial periods, the income from investments and subscriptions amounted in 1902 to £3946, in 1912 to £6222, and in 1922 to £8080, the amounts distributed being respectively £3795, £5497, £8397. The number of grantees has increased from 140 in 1902 to 304 in 1922, and annuitants from 140 to 168.

The progress of the Guild, a branch of the Fund, is shown by the increase in income from £1725 in 1912 to £2536 in 1922. The progressive character and successful results of the Guild's work are well known. Notwithstanding all that is being done the income is far below what is needed, and it must, I fear, be recognised that the lack of support is due to the apathy of the profession and not the slackness of the committee of management or of its executive.

I am, Sir, yours faithfully,

CHARTERS J. SYMONDS,
Hon. Treasurer.

Royal Medical Benevolent Fund, 11, Chandos-street, W. 1, August 6th, 1923.

PS.—Since the above was written I have seen the letter which appeared in THE LANCET last week from Dr. Astley V. Clarke, explaining the method adopted by the practitioners on the panel in Leicester of subscribing to the Fund a farthing for each State-insured person. Last year this yielded £50. I hope, with Dr. Astley Clarke, that other insurance areas will follow the example of Leicester.

THE IMPERIAL CANCER RESEARCH CAMPAIGN AND THE CANCER PROBLEM.

To the Editor of THE LANCET.

SIR,—The labours of the Medical Research Council and of the administrators of the Imperial Cancer Research Fund have been distinctly disappointing, and I fear unless the promoters of the British Imperial Cancer Research Campaign exercise their functions as to the use of the moneys they secure very wisely and very well the knowledge gained may be equally disheartening and disappointing.

Before going to the public for the large sum of money they require to put cancer research on a hopeful basis, it would be well to ensure that the administrative side of the scheme should be worked out not by a committee of scientists and medical experts alone, but that men of proved administrative and business capacity should be added to it, and that when the scheme is decided upon its operation should be in the hands of such a hybrid committee, and that it should have such powers of control conferred upon it as would ensure efficient coördination and coöperation, the avoidance of overlapping, and the strictest economy in the carrying out of research in all its varied departments. This committee should have power to afford pecuniary aid and special facilities for using the resources of any or all institutions subsidised from their funds to individuals who in their opinion displayed unusual ability, originality, and initiative in research. The subsidy granted by the Treasury to the Imperial Cancer Research Fund is utterly inadequate, and during the debate on the Ministry of Health vote on June 28th, in response to my appeal, the Ministry admitted this, but unless the public shows decidedly that it is behind the Minister in this connexion I fear the Treasury will not find the necessary funds. In virtue of any subsidy granted by the House of Commons, the Minister of Health, officials of his department, and Members of the House should be represented on the committee.

In my view, however, the Minister can assist research in other ways than by subsidy, and that, too, to an extent and with an efficiency which he alone can bring to bear. I refer to the clinical side of research. He alone can procure and collate that mass of clinical information possessed by the medical practitioners throughout the country. Through his medical officers of health and their staffs, and the Registrar-General's department, every case of death from cancer notified might be investigated not by a lay official, but by the M.O.H. himself or his tuberculosis officer, and a questionnaire drawn up that might include all matters bearing upon possible cancer causation. Cancer areas, and there are such, might be mapped out. Cancer houses, and it is suspected there are such, might be located. Information might be gleaned from meteorological, geological, water, and food-supply experts, *et hoc genus omne*. No possible avenue of approach to cancer should be left unexplored, and this could best be done through the health departments of the various local authorities under the guidance of the Minister. We are so utterly ignorant of the causes and sources of cancer that we never know at what moment or from what direction illuminating knowledge may arrive.

I am, Sir, yours faithfully,

Blackpool, August 1st, 1923. LEONARD MOLLOY.

CANCER FACTS AND THEORIES.

To the Editor of THE LANCET.

SIR,—May I be allowed to add a few remarks, from a different point of view, to your admirable leading article with this title in your issue of July 28th.

The complete change in the whole aspect of cancer research as a result of the discovery of means by which primary cancer can be produced in laboratory animals hardly seems to be realised. Before this discovery was made an incalculable number of experiments were done with transmissible tumours derived from primary cancers. Upon this work a vast superstructure of theory was built and acres of paper wasted. In my own case I wasted several years working with these tumours produced by grafting, to find in the end that they had not the characteristics of primary cancer, that what would cure them with practical certainty had no effect on primary cancer, and that in fact the two were in no way comparable. There was at that time no practicable method of bringing primary cancer under experimental conditions either for observation or for the trial of treatments. Cases occurring in the human subject obviously cannot be brought under experimental conditions. Spontaneous cancer occurring in animals is equally unworkable. Only large numbers of superficial cancers observed at a sufficiently early stage and occurring more or less simultaneously would provide the necessary material. When these points are considered it will be realised that those engaged in cancer research laboured under a serious, if not hopeless handicap. This handicap is now removed as far as laboratory work is concerned. Primary cancer can be produced at will and observed under experimental conditions with the full advantage of controls and every other necessary check. All excuse for premature experiments with probable or improbable cures upon the human subject is removed.

In these circumstances I think it is desirable that full credit should be given to those who made this

discovery, Yamagiwa and Schikawa of the University of Tokyo. An account of the experiments by which they produced cancer in animals by the application of coal tar, externally and by injection, is available in the *Journal of Cancer Research*, January, 1918. Bloch and Driefuss were conducting researches on the effect of coal tar in the production of cancer in 1912 and resumed the work in 1920. In mice they produced cancer with the whole tar and also with some of its different elements. They claim to have isolated the cancer-producing constituent of the tar.[1] They had been, however, forestalled by the Japanese. If it be true as you say in your leading article that probably within the next few years we may see "results in the diagnosis and treatment of malignant disease which could not have been foreshadowed a very few years ago" and these results are achieved along the lines you suggest, then I think it should be clearly understood that the discovery that made this advance possible was the experimental production of primary cancer in laboratory animals.

I am, Sir, yours faithfully,

CHARLES WALKER.

University of Liverpool, July 30th, 1923.

OPHTHALMOLOGICAL TRAINING FOR MEDICAL STUDENTS.

To the Editor of THE LANCET.

SIR,—A not inappropriate comment on Mr. Percy Flemming's letter in THE LANCET of last week, relative to the use of the ophthalmoscope in general practice, may be found in a sentence written more than 50 years ago by the distinguished physician who is now the Regius Professor of Physic in the University of Cambridge. The sentence runs: "Every medical school is now . . . . bound to teach its students the use of the ophthalmoscope as carefully as the use of the stethoscope is taught." The task which Sir Clifford Allbutt accepted in 1871 Mr. Flemming in 1923 proposes to abandon. This is the more astonishing seeing that the difficulties of the earlier date have been largely reduced by the introduction of the electric ophthalmoscope, and yet I should be inclined to accept Mr. Flemming's conclusion if, as he appears to decide, instruction and practice in the use of the ophthalmoscope must be limited to the brief period spent by the student in the ophthalmic department. If, however, the exhortation conveyed in Sir Clifford Allbutt's comparison is accepted, no such limitation can be allowed. For the use of the stethoscope is taught by compelling the student to practise the instrument on every patient, as in this way alone can he acquire the auditory standard which enables him to recognise both the limits of the normal and departures, slight or gross, from the accepted level. And when in the medical wards and out-patient service the ophthalmoscope is taught and practised as the stethoscope is taught and practised—and the enterprise is easily accomplished—the student will become as expert with the one instrument as with the other. With neither can he be expected to appreciate, without a long experience, the finer shades of change produced by disease. But in each instance he is provided with an opportunity for the self-education which is the avenue to expert judgment, and if the medical curriculum affords and enforces this opportunity it has largely fulfilled its duty. To abandon the ophthalmoscope as beyond the scope of general practice because all its values cannot be obtained in some few weeks passed in an ophthalmic department would be as reasonable as to abandon the stethoscope because, even at the end of the curriculum, not all its possibilities have been acquired. Let the fashion of instruction in the one case be equally applied to the other, and there can be no doubt that with each there will be one and the same standard of success.

I am, Sir, yours faithfully,

London, W., August 6th, 1923. C. O. HAWTHORNE.

[1] Schweizerische Med. Woch., Basle, 1921, No. 45, 51.

PHYSICAL AND RECREATIONAL TRAINING.

To the Editor of THE LANCET.

SIR,—As one of those who were privileged to be present at the demonstration of physical and recreational training held before the B.M.A. at their recent meeting in Portsmouth, an account of which was given in your issue of last week, may I express the hope that the benefit of this kind of training shall not remain confined to the Navy. I suppose we most of us feel that our board school education fails to develop certain sentiments and elements of strong character which the Naval School of Physical and Recreational Training has managed to include.

It is to be hoped, therefore, that the principles involved will not be lost to sight by the educational authorities of this country, but that steps will be taken with the object of founding a national school of physical and recreational training, so that there may be gradually accumulated an ample supply of skilled instructors. For while there is an unquestionable need for this particular kind of training among the masses, it can be satisfactorily carried out only by teachers who have themselves undergone a thorough course of practical instruction in the principles upon which the system is based.

I am, Sir, yours faithfully,

Southsea, August 2nd, 1923. HAROLD BURROWS.

AN EPIDEMIC OF ERYTHEMA NODOSUM.

To the Editor of THE LANCET.

SIR,—With reference to the annotation on this subject in THE LANCET of July 28th (p. 180), giving details of Prof. E. Ledoux's paper in the *Revue de Médecine*, may I call the attention of your readers to an instructive monograph on erythema nodosum by Dr. A. A. Lendon of Adelaide? It is a little unfortunate, perhaps, that the author gave it the title of "Nodal Fever" (1905). For that reason it may have been overlooked by those interested in the subject. Dr. Lendon came to the conclusion as a result of special observation that the condition was *sui generis*, and, from what I have observed, I am inclined to agree with Dr. Lendon.

I am, Sir, yours faithfully,

London, W., August 3rd, 1923. GEORGE PERNET.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg.-Comdr. M. P. Jones is placed on the Retd. List with the rank of Surg.-Capt.

ROYAL NAVAL VOLUNTEER RESERVE.

The Royal Naval Volunteer Reserve Officers' Decoration has been conferred upon Surg.-Capt. A. R. Brailey.

The undermentioned appointments are made at the War Office: Lt.-Gen. Sir W. B. Leishman, F.R.S. (late R.A.M.C.), to be Director-General vice Lt.-Gen. Sir T. H. J. C. Goodwin (late R.A.M.C.), who is placed on retired pay.

ROYAL ARMY MEDICAL CORPS.

Maj. W. Davis to be Lt.-Col., vice Lt.-Col. G. H. Goddard (ret. pay).

Temp. Capt. T. Brodie relinquishes his commn. and retains the rank of Capt.

TERRITORIAL ARMY.

Capt. T. S. Goodwin (late R.A.M.C.) to be Capt.

D. R. Lewis and T. D. Overend to be Lts.

General Hospitals: The undermentioned relinquish their commns. and retain their rank except where otherwise stated: Capts. G. M. Benton (granted the rank of Maj.), J. P. Buckley, E. Moir (granted the rank of Maj.), T. P. McMurray, and H. H. Rayner.

ROYAL AIR FORCE.

Squadron Leader F. C. Jobson is transferred to Reserve, Class D.2.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Adjournment of Parliament.

PARLIAMENT adjourned on Thursday, August 2nd, for the summer recess. It will reassemble on Nov. 13th.

HOUSE OF LORDS.

WEDNESDAY, AUGUST 1ST.

Dentists Bill.

The Dentists Bill was read a third time and passed.

HOUSE OF COMMONS.

WEDNESDAY, AUGUST 1ST.

Public Health.

On the motion for the third reading of the Consolidated Fund Bill,

Mr. RHYS DAVIES asked the Minister of Health whether he had any further information relative to the shortage of hospital accommodation in this country. While there were 30,000 empty beds in the Poor-law hospitals there were not many short of 100,000 people waiting for admission to the ordinary hospitals. In one London hospital there were 300 persons on the waiting list for 15 beds. He did not blame the Minister for this state of things, but he thought it was his duty to carry out the recommendations of the 1921 committee of inquiry. He wished to protest against the action of certain employers in Gloucester who had given notice of dismissal to their employees who refused to be vaccinated. He hoped that the Minister would come to the rescue of these people who objected to vaccination, because some people thought that the whole thing which had been boosted in the press as a small-pox scare was merely a "stunt" on behalf of some newspapers. The Minister of Health had received a deputation that week from the Lancashire Insurance Committee supported by Members of the House relative to an arrangement which it was suggested should be made between Mr. Spahlinger and the Ministry of Health. He was sorry to learn that the result of the negotiations so far was not very encouraging. He thought that the Minister would agree that the treatment of consumption had reached a deadlock. Sanatorium treatment after all was merely a treatment to ward off the disease. The deputation asked the Minister to support Mr. Spahlinger by way of a grant or subsidy and not only by way of purchasing the serum. He believed that the Minister had gone so far as to say that he was prepared to set aside a separate institution with 40 or 50 patients upon whom experiments could be made with the new treatment, but Mr. Spahlinger was not able financially to accept an agreement of this kind. He appealed to the Minister to come to Mr. Spahlinger's aid.

Mr. MARCH said that in his district there had been a big increase in tuberculosis since the war and they had had the sanction of the Ministry of Health to have two doctors to attend to the patients. But during the summer holidays they had only one doctor instead of two. The consequence was that the patients had to be neglected for two months. They were also informed that extra nourishment was not to be granted to these patients. They were also informed that they were not to spend so much money in milk at their maternity and child welfare centres. He hoped that the Minister would help those local authorities who desired to do all they could to keep the people healthy.

Lieut.-Colonel HODGE said that the Spahlinger cure had proved efficacious in 80 per cent. of the cases treated. Mr. Spahlinger, however, was in difficulties to the extent of about £100,000. But only £24,000 of that amount was pressing. But for the sum of £100,000 they could obtain his laboratory, the whole of his estate, his father's estate, which was at present in the hands of the bank on mortgage. Mr. Spahlinger was willing to hand them over on trust for ten years. He only asked further for a sum of money to allow him to continue his research. He had gone the length of saying that they might appoint a committee to record how the money was spent. For the sum of £100,000 and a subsidy of £10,000 a year for three years Mr. Spahlinger was prepared to give the Minister of Health 50 per cent. of his sera and his vaccine.

Lord EUSTACE PERCY, Parliamentary Secretary to the Ministry of Health, said that on Jan. 1st the number of empty beds in the Poor-law infirmaries was just over 6000, or about 18 per cent. Considerable steps were being taken all over the country for the better organisation and utilisation of the space in the Poor-law infirmaries. As regarded the point about employers and vaccination in Gloucester, if he were in that town he should certainly claim the right to protect his household from risk by refusing to take into his private employment any person who was not vaccinated, and he should regard it as a gross form of tyranny if the State told him not to do so. There was a grant at any rate in certain cases and areas for extra nourishment for people suffering from tuberculosis. In regard to Mr. Spahlinger the Ministry of Health sent out a specially qualified officer to Switzerland in 1922, and on receipt of that officer's report the Ministry, in August last year, made a proposal to Mr. Spahlinger which he was unable to accept. Arrangements made between the Red Cross Society and Mr. Spahlinger also fell through. This year there had been a renewal of the negotiations and the Minister had seen Mr. Spahlinger. The position was this. The Government were interested in the Spahlinger treatment and they were satisfied that there was a prima facie case for such further scientific inquiry as would enable medical authorities and the world in general to form a definite and final opinion as to its efficiency. But if there was to be any question of the expenditure of public funds Parliamentary sanction would be necessary, and the Government would not be justified in asking for such sanction except on the basis of adequate information and reasonable security. In the opinion of the Minister of Health these conditions could best be satisfied by asking Mr. Spahlinger to take an early opportunity of making a full statement of his process and results to a body competent to pass expert opinion upon it. His right hon. friend understood that such an opportunity was being afforded in this country, and when Mr. Spahlinger had taken advantage of it it should be possible to arrive at a decision as to what action, if any, could appropriately be taken by the Government. Meanwhile the Minister hoped that the appeal which was now being made for funds from private sources might be successful in meeting the immediate difficulties of Mr. Spahlinger's position.

The Bill was read a third time.

Cost of Inmates of Poor-law Institutions.

Mr. CECIL WILSON asked the Minister of Health the annual cost per head for England and Wales of the inmates of Poor-law institutions, distinguishing between children's homes, infirmary, and other inmates respectively.—Mr. NEVILLE CHAMBERLAIN replied: The annual cost per head for the year ending March 31st, 1921, for England and Wales of the inmates of the several classes of Poor-law institutions was as follows:—

	£	s.	d.
Homes for children	73	18	7
Poor-law infirmaries and other Poor-law institutions for persons suffering from infirmity of body or mind	148	12	1½
General Poor-law institutions	78	14	7½
All classes of Poor-law institutions	88	5	3½

Venereal Disease Disinfectants.

Mr. PETO asked the Minister of Health whether he had consulted the Law Officers of the Crown as to the effect of the Venereal Disease Act, 1917, in connexion with the report of the committee of inquiry on venereal disease under the chairmanship of Lord Trevethin; and, if so, whether he could give the House their opinion as to the position of chemists under the Act and the necessity for legislation, if effect was to be given to the recommendations in Clause 14 of the committee's report.—Mr. NEVILLE CHAMBERLAIN replied: I have consulted the Law Officers of the Crown as to the effect of Subsection 2 of Section 2 of the Venereal Disease Act, 1917, and I am advised by them that there is nothing in that subsection to prevent a chemist from selling disinfectants for the prevention of venereal disease where no written or printed instructions are affixed to or delivered with the disinfectant, or from giving verbal recommendations of medicinal preparations intended to be used or applied for the purpose. In the light of this opinion it would appear that legislation would be necessary in order to permit written or printed instructions to be supplied with the disinfectant or to restrict the existing powers of chemists by confining them to the sale of articles, the composition of which had been approved by a competent authority.

Deaths from Measles.

Sir ROBERT NEWMAN asked the Minister of Health if the deaths resulting from measles had increased since the compulsory notification of that complaint had been abolished.—Mr. NEVILLE CHAMBERLAIN replied: There has been no such increase. The average number of deaths from measles during the past three years has been 5042 per annum as compared with 7318 per annum for the four years, 1916 to 1919, during which the notification of measles was compulsory throughout the country.

Advertisements on Medical Certificates.

Mr. RAINE asked the Minister of Health if he was aware that there were large stocks of certificates with advertisements on the reverse side in the hands of some of the industrial

insurance companies; and would he, in view of the strong exception taken by the medical profession to such certificates being issued, cause these stocks to be replaced by the new certificates which were now being printed.—Mr. NEVILLE CHAMBERLAIN replied: The hon. Member has been misinformed. Certificate books are issued to insurance committees and not to approved societies. A new supply without advertisements will be available shortly, but I cannot undertake to withdraw the books already issued to practitioners.

Vaccination and Small-pox.

Mr. LEACH asked the Minister of Health whether he had any official information that it was the practice in the United States to carry out vaccination by means of a single insertion only, and had it been found that this method was as protective against small-pox as the official four marks method adopted in this country.—Mr. NEVILLE CHAMBERLAIN replied: I have no official information as to the method of vaccination in the United States of America. The Royal Commission on Vaccination concluded that vaccination in four places giving a total vaccination area of half of a square inch is more effectual and gives better protection against small-pox than is afforded by one place or a less vaccinated area.

Mr. PALING asked the Minister of Health whether, on Sept. 1st, the form of statutory declaration of objection to vaccination contained in the notice of the requirements of the Vaccination Acts given by the registrar when a birth was registered was to be dropped; and whether, under a new order to be issued on the above date, every parent wishing to get exemption for his child was to be compelled to go to the vaccination officer for the form.—Mr. NEVILLE CHAMBERLAIN replied: The answer to the first part of the question is in the affirmative and to the second in the negative. The effect of the new order, which has already been issued, is that from and after Sept. 1st any parent wishing to make a statutory declaration of conscientious objection to vaccination may obtain a form of declaration from the vaccination officer, or may make a declaration in the form prescribed by the Vaccination Act, 1907, or in a form to the like effect.

Mr. BROAD asked the Minister of Health how many deaths from small-pox were registered from 1906 to 1920; how many chicken-pox deaths were registered in the same period; and whether in view of the statement of the Registrar-General in his report for the year 1889 that it was probable that most of the deaths registered as due to chicken-pox were in reality cases of modified small-pox, he would have the vaccinal condition of the deaths from chicken-pox stated on the death certificate, and also have such cases included in those of small-pox.—Mr. NEVILLE CHAMBERLAIN replied: The particulars asked for are as follows:—

England and Wales.

Year.	Deaths from—		Year.	Deaths from—	
	Small-pox.	Chicken-pox.		Small-pox.	Chicken-pox.
1906	21	106	1914	4	122
7	10	120	15	13	92
8	12	93	16	18	65
9	21	94	17	3	69
10	19	97	18	2	54
11	23	80	19	28	55
12	9	76	20	30	71
13	10	83			

The suggestions in the last part of the question will receive consideration.

Asylum Superintendent's Appointment.

Major MCKENZIE WOOD asked the Minister of Health whether he had received any protest from the medical profession in Lancashire with regard to the appointment of the superintendent of Prestwich Asylum, Manchester; and what action he proposed to take in the matter.—Mr. NEVILLE CHAMBERLAIN replied: The Board of Control have received no official information of the appointment of a medical superintendent at Prestwich Mental Hospital, but they understand that an appointment, to which strong exception is taken, was made last week by the Lancashire Asylums Board. The appointment rests with that body alone, but the Board of Control in January last suggested that it would be of advantage if they were consulted in regard to it. I do not know why this advice has not been acted upon, but the Board of Control propose to make some inquiry about the appointment.

Maternity and Child Welfare Centres.

Mr. TURNER asked the Minister of Health if his department were taking any special steps to develop maternity and child welfare clinics so as to cope with and help to reduce the death roll of ten per day occurring amongst women during pregnancy and childbirth.—Mr. NEVILLE CHAMBERLAIN replied: I am well aware of the continued high rate of maternal mortality associated with childbirth, and under the Maternity and Child Welfare Act I am endeavouring to encourage the establishment and development of maternity and midwifery services (including antenatal centres, maternity hospitals, and the provision of midwives). I hope that by such means the present death-rate will be progressively and substantially reduced.

Deaths of Women in Childbirth.

Mr. RHYS DAVIES asked the Minister of Health the percentage of deaths of women on confinement in this country for each of the last ten years and for periods of ten years prior; and how those figures compared with records in other countries.—Mr. NEVILLE CHAMBERLAIN replied: Figures for England and Wales in regard to deaths of women assigned to pregnancy or childbirth for the last ten years and for decennia from 1861 to 1910 are given in the following table together with such figures as are available in regard to other countries:—

Deaths of Women Assigned to Pregnancy or Childbirth.

A = Deaths per million living. B = Deaths per 1000 births.

—	England and Wales.*		Holland.†		Italy.		Japan.		Switzerland.		Sweden.	
	A	B	A	B	A	B	A	B	A	B	A	B
1861–70	341	4·70	—	—	—	—	—	—	—	—	—	—
1871–80	350	4·72	—	—	—	—	—	—	—	—	—	—
1881–90	318	4·73	—	—	—	—	—	—	—	—	—	—
1891–1900	301	5·09	—	—	—	—	—	—	—	—	—	—
1901–10	206	4·01	—	—	—	—	—	—	—	—	—	—
1913	185	3·96	—	—	—	—	—	—	—	—	53	2·28
1914	192	4·17	—	—	75	2·41	—	—	—	—	58	2·60
1915	176	4·18	—	—	—	—	120	—	—	—	63	2·90
1916	166	4·12	134	2·58	59	2·45	—	—	64	3·37	56	2·66
1917	132	3·89	131	2·53	56	2·86	120	3·59	44	2·42	51	2·46
1918	127	3·79	147	3·00	—	—	—	—	49	2·62	—	—
1919	154	4·37	161	3·35	—	—	—	—	60	3·19	—	—
1920	210	4·33	—	—	—	—	—	—	62	2·93	—	—
1921	168	3·91	—	—	—	—	—	—	—	—	—	—
1922	149	3·81	—	—	—	—	—	—	—	—	—	—

* Prior to 1911 puerperal nephritis and albuminuria were not classed to pregnancy and childbirth and consequently the rates shown from 1913 onwards are from ·22 to ·25 in excess of what they would have been under the old classification.

† The number of deaths per million living in Holland for 1911–15 (inclusive) was 126. The number of deaths per million living in Denmark in 1920 was 60 and the number per 1000 births was 2·35.

Tuberculosis in the Navy.

Lieut.-Colonel MOORE-BRABAZON asked the First Lord of the Admiralty the number of men, categoried in branches, who had been discharged from the Navy with tuberculosis in the last three years.—Major BOYD CARPENTER replied: No statistics have been prepared for 1920, and the figures for 1922 are not yet available. The following table gives the figures for 1921:—

Classes.	No. of cases.	Ratio per 1000 of average number borne.
Commissioned officers ..	10	1·77
Subordinate officers ..	—	—
Warrant officers	2	0·69
Seamen	103	2·46
Boys	14	1·69
Engine-room ratings ..	75	2·50
Marines	24	3·20
Stewards and cooks ..	5	1·33
Sick-berth staff	6	4·27
Regulating branch ..	—	—
Writers	8	8·77
Victualling ratings	3	4·49
Ships cooks	3	1·71
Armourers and blacksmiths	—	—
Other artisans	3	0·83
Kroomen, seedies, and lascars	—	—
Telegraphists	8	2·76
Miscellaneous ratings ..	—	—

Child's Death in Hospital.

Mr. GILBERT asked the Minister of Health whether his attention had been called to an inquest held on a child in one of the hospitals of the Metropolitan Asylums Board, at which charges were made by nurses against the doctor who attended the child; whether he proposed to hold any inquiry into the case; and could he make any statement on the subject.—Mr. NEVILLE CHAMBERLAIN replied: I have received a report upon this case from the Metropolitan Asylums Board, of which I will send the hon. Member a copy. It will be seen from the report that a full inquiry was held by the coroner, that the jury found that the death of the child was due to natural causes, and that the state-

ments made by the nurses contained serious discrepancies. The nurses have been reprimanded for their failure to make an immediate report of the occurrences which they allege took place. Under all the circumstances I do not think that further inquiry on my part would serve any useful purpose.

Replying to a further question, Mr. CHAMBERLAIN said that he believed that the doctor had since resigned, but he could not state the reason for the resignation.

THURSDAY, AUGUST 2ND.

Highbury Pension Hospital Fire.

Mr. MACPHERSON asked the Minister of Pensions whether the committee which was appointed by him to enquire into the cause of the fire at Highbury Pensions Hospital and to make recommendations for the prevention of fire in the future at Ministry hospitals had yet reported, and if so, whether the report would be published.—Major TRYON replied: I have just received the report of this committee and I am arranging for it to be published.

Grant for Combating Venereal Disease.

Mr. ALBERT BENNETT asked the Prime Minister whether the Government would consider the allocation of the £12,000 annual grant for combating venereal disease between the Society for the Prevention of Venereal Disease and the National Council for Combating Venereal Disease; whether he was aware that the latter organisation was the only one in receipt of any State assistance; and why, seeing the Trevethin report had been unconditionally accepted by both, there was any differentiation made in respect to the Government assistance given.—Mr. NEVILLE CHAMBERLAIN replied: As regards the first part of the question, the maximum grant which will be paid from the Ministry direct to voluntary organisations in aid of their work in combating these diseases is £7500. The answer to the second part is in the affirmative. As regards the third part, the question of Government assistance to the work of voluntary organisations will come up for review in connexion with the recommendations in the Trevethin Report which is now under consideration.

Oxford and Cambridge Grants.

Mr. CHARLES BUXTON asked the Secretary to the Treasury whether he would take steps to obtain and publish annual returns from Oxford and Cambridge Universities in the same form as those now published in respect of other universities in Great Britain under the auspices of the University Grants Committee.—Sir W. JOYNSON-HICKS replied: I have requested the University Grants Committee to take such steps as appear practicable to obtain from the university authorities at Oxford and Cambridge returns which will be as nearly comparable as circumstances permit with those annually supplied to the Committee by other grant-aided university institutions and published in the Committee's Blue Book. The hon. Member will, however, appreciate that the conditions at Oxford and Cambridge differ in certain material respects from those which prevail at the other universities, and that as the records and accounts at the two ancient universities have not hitherto been kept with a view to returns on the lines which are required by the University Grants Committee, a little time may elapse before properly comparable figures for Oxford and Cambridge can be provided.

Medical News.

UNIVERSITY OF EDINBURGH.—At the graduation Ceremonial on July 20th the following degrees were conferred:—

DOCTOR OF MEDICINE.

Alfred F. Adamson, Robert A. Chambers (in absentia), Jacob D. M. Claassens, *James H. Clarke, William H. Dickinson, James F. Duncan, *Basil A. G. A. Edelston, †Joseph H. Fairweather, Thomas J. Howell, †Hugh A. Macmillan, ‡Robert Mailer (in absentia), †Gerald I. Moriarty, *James P. Watt, and ‡Harold W. Wilson.

* Commended for thesis. † Highly commended for thesis.
‡ Awarded gold medal for thesis.

BACHELOR OF MEDICINE AND BACHELOR OF SURGERY.

James N. Adam, Stuart F. Allison, David G. Anderson, David T. Anderson, Edward W. Anderson, Hope P. Anderson, David Band, John S. Banks, Charles Bateman, Elizabeth A. Baxendine, Ralph S. Begbie, Malcolm J. Bett, Alexander Beveridge, Helen Blacklay, Anna L. Blair, Charles E. M. Blumer, Harriette G. Bogle, Jane P. S. Bow, George P. F. Bowers, Margaret G. Bowie, Edwin F. Boyd, William Boyd, Robert D. Bradshaw, Donald Brims, Norman M'Dowell Brown, William N. Brown, William J. Burns, Thomas D. Burt, Andrew J. M. Butter, Eva T. Cairns, Flora H. M. Calder, Dugald Cameron, James D. S. Cameron, Angus Campbell, Lovat F. Capell, †Robert Carmichael, Harold Carter, William H. Carter, Aileen M. Chester, Dorothy A. Christie, Alec L. Clark, Antonio G. Cola, Harry H. Condie, John Cooper, Andrew Cowan, John M. Cowan, Marget A. Craig, James Crooks, James F. Cunningham, James D. Dear, Robert Dick, Alexander Dickson, William R. Duff, Gavin A. Dunlop, Henry H. Dunlop, Charles W. Durward, *Caroline A. Elliott, Helen B. Ewart, Marjory H. Ewing, William R. D. Fairbairn, John S. Faulds, Alan W. Fawcett, Andrew W. Gardiner, Elizabeth M. R. Garrigan, Frederick W. Gavin, John Gillies, Malcolm A. Graham-Yooll, Robert Grant, *John Gray, Alexander M. M. Grierson, David Grieve, Ian M. D. Grieve, Basil T. Halliwell, Ronald W. W. Hardie, George M'Neill Hargreaves, Clement Henri de la Harpe, James A. Harris, Edith N. Hartley, William M. Hetherington, Stephen L. Hislop, Paget C. C. B. Hook, Doris M. Hopps, George Horne, Agnes M. M. Hunter, Edith I. M. Irvine-Jones, Agnes L. Jenkins, Clifford D. Kennedy, Alexander M. Kerr, Henry J. R. Kirkpatrick, Pieter Louis Kock, Ena M'Laren Laing, John Lambert, William T. Lawson, Tiang Keng Lee, Reuben Levinson, Nora Lister, Elspeth H. R. Livingstone, William Love, Edward B. Low, Phyllis M. H. Lunn, George A. Macadie, Donald I. Macaulay, Archibald R. MacCallum, Alexander R. M'Clure, Adam D. Macdonald, John A. Macdonald, Andrew M'Dowall, William S. M'Ewan, Robert M. Macfarlane, John S. MacGill, Isaac H. Maciver, Francis B. MacKenzie, Alexander MacPherson, John B. C. Madge, William F. Mair, Desmond S. Malone, Ahmed Mariy, John J. B. Martin, George A. Masson, Reginald J. Matthews, Margaret G. Maxwell, *Alison J. Maxwell-Wood, Henry Miller, Ellen A. Morrison, George H. Morrison, William Morrison, Janet M. Morton, Ralph Morton, Hugh Munro, Harold B. Newcombe, Agnes M. Ogilvie, Denis C. Osborne, Llewelyn C. Palmer-Jones, *James R. K. Paterson, Susanne J. Paterson (in absentia), Kate Y. Pearson, Archibald Penman, George H. Percival, Oswald O. Popper, Frederic N. R. Price, Jean R. Purves, Adam L. K. Rankin, John Reid, Robert J. Reid, James S. Riddle, Frank L. Rifkill, Richard P. A. Rigg, Hilda C. Roberts, Ian M. Robertson, Gilbert M. Ross, Alexander A. M. Sandison, Pincus Schneiderman, William C. S. B. Sewrey, Donald A. M. Shearer, Bertram Siddons, William A. Simpson, James Sinclair, Cecil Siung (in absentia), James M'Ildowie Smellie, Arthur B. Smith, Arthur F. Smith, Dorothy F. Smith, Jean L. Smith, Sydney M'Kendrick Smith, George Somerville, Robert C. Speirs, Alice Steven, Donald B. Strachan, *John Sturrock, Theodotus J. Sumner, Hector W. Sutherland, Charles J. Swanson, Richard E. M. Taunton, Leslie M. Thompson, Vera Thompson, Elsie Thomson, Frank B. Thomson, George H. Thomson, Kenmure J. Thomson, Mahmoud S. Toukhy, John Trotter, Thomas Tully, Anne M. Turnbull, Duncan A. Urquhart, Edward R. C. Walker, Forbes M'Donald Walker, Edgar P. Waters, William N. B. Watson, George M. Westwood, *Adam Cairns White, Illtyd G. Williams, John H. Williams, Norman B. Williamson, Charles R. Wilson, Jeanie Wilson, Mary Wilson, *William Muirhead Wilson, John F. S. Wiseman, Gerald K. Wood, Eric D. M. Wright, David H. D. Young, James B. Young, and James N. Young.

† First-class honours. * Second-class honours.

DIPLOMA IN PUBLIC HEALTH.

Esther J. Campbell, Mary C. Campbell, Grace Cumming, Gladys H. Dodds, Thomas Ferguson, Elspeth L. Gilmour, Elizabeth R. Kemp, Catherine A. J. Mitchell, Dorothea M. Norwell, Annie C. Roberts, Jessie W. Strang, Isabella Taylor, Annie E. Webster, and Doris S. Williams.

The following awards were also made: Thesis Gold Medallists: Robert Mailer and Harold W. Wilson. Cameron Prize in Practical Therapeutics: John J. R. Macleod. Gunning Victoria Jubilee Prize in Materia Medica: John H. Crawford. Gunning Victoria Jubilee Prize in Forensic Medicine: Douglas J. A. Kerr. Gunning Victoria Jubilee Prize in Obstetrics: Douglas A. Miller. Ettles Scholarship and Leslie Gold Medal: Robert Carmichael. Allan Fellowship in Clinical Medicine and Clinical Surgery: John Gray. Murchison Memorial Scholarship in Clinical Medicine: John Gray. M'Cosh Graduate's and Medical Bursaries: William N. B. Watson. Beaney Prize in Anatomy and Surgery: Caroline A. Elliott. Mouat Scholarship in the Practice of Physic: James L. N. Dinwiddie. Conan Doyle Prize: Gabriel G. King. Annandale Gold Medal in Clinical Surgery: John M. Cowan. Buchanan Scholarship in Gynæcology: Ian M. Robertson. James Scott Scholarship in Midwifery: Frank B. Thomson. Scottish Association for Medical Education of Women Prize: Caroline A. Elliott. Dorothy Gilfillan Memorial Prize: Harriette G. Bogle. Wellcome Medals in the History of Medicine: Gold Medal, James Aitken; Silver Medal, Donald G. S. M'Lachlan. Wightman Prize in Clinical Medicine: William J. A. Coldstream. Cunningham Memorial Medal and Prize in Anatomy: George Brown. Whiteside Bruce Bursary: Ian G. W. Hill.

PRUDENTIAL ASSURANCE COMPANY AND MEDICAL RESEARCH.—The board of management of the Hospital for Sick Children, Great Ormond-street, London, whose Chairman is the Earl of Wemyss, have decided to establish a Research Department in which highly trained experts may study the life histories, conditions of growth, &c., of living agents of children's diseases. Examination revealed the fact that some £2000 would be required each year for the working of the Research Department; the board appealed for financial help to the Directors of the Prudential Assurance Company, on the ground that the proposed research work would promote longevity and the development of a healthier and more virile race. As a result, the Directors of the "Prudential" consented to provide the money required for the first year.

LONDON HOSPITAL.—The old students' dinner of the London Hospital will be held at the Trocadero Restaurant on Wednesday, Oct. 3rd, at 7.30 for 8 P.M.

THE Schorstein Memorial Lecture in Clinical Medicine will be delivered by Dr. Gordon Holmes in the Medical College of the London Hospital during the winter term.

LONDON HOSPITAL MEDICAL COLLEGE.—A lecture on the Value of Accurate Small-pox Diagnosis will be delivered in the Anatomical Theatre of the College by Dr. W. McConnel Wanklyn, principal assistant medical officer of health, London County Council, on August 15th.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.—Entrance Scholarships for the year 1923 have been awarded as under: Entrance Arts Scholarship (value £50): Mr. D. H. Le Good (Alleyn's School). Entrance Science Scholarships: (1) Mr. H. C. Trowell (Reigate Grammar School) value £150; (2) Mr. I. J. Jones (St. Thomas's Medical School) value £60. William Tite Scholarship (value £25): Mr. J. B. George.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—A special course of post-graduate lectures in infants' diseases, for medical officers of welfare centres and others, will be given at the Infants' Hospital, Vincent-square, Westminster, London, S.W., from Sept. 3rd to 21st. The fee for the course is £5 5s., and the names of those wishing to attend should be sent at once to the Secretary of the Fellowship, 1, Wimpole-street, W. 1. The dates of the lectures will be announced in our Medical Diary.

WALSALL M.O.H.: A COMPROMISE REACHED.—Some time ago the Walsall Town Council offered a salary of £800 per annum as the salary for the borough medical officer. The British Medical Association stipulated that the amount should be £1100, and a dispute thereupon arose, with the result that there was not a single application for the appointment. On August 4th a compromise was reached, and Dr. J. A. Clark, borough tuberculosis officer, was appointed at a salary of £900.

Dr. Michael J. Nolan, resident medical superintendent, Down District Asylum, Downpatrick, Co. Down, has been elected President of the Medico-Psychological Society of Great Britain and Ireland. Dr. Nolan is probably the only man to hold office under both the Irish Free State and the Government of Northern Ireland, being consulting visitor in lunacy to the Lord Chief Justice of either country.

ROYAL NORTHERN HOSPITAL.—The hospital board of management announce that the £20,000 which was needed by July 31st to prevent the closing of wards in the four institutions under their control has not been obtained. Consequently they have had no alternative but to close 70 beds. Although the appeal was widespread, only £1500 have been received towards this fund. This closing of 70 beds means that over a period of a year another thousand cases will have to be refused admission for treatment.

DONATIONS AND BEQUESTS.—The late Mr. Hugh Fullerton, of Brackenhoe, Sale, Cheshire, has left £5000 to the Christie Hospital Cancer Pavilion (if not already given), for assisting in carrying on scientific investigation in relation to cancer; £500 each to the Whitehaven and West Cumberland Infirmary and the Manchester Royal Infirmary; and £100 each to the National Lifeboat Institution, the Royal Eye Hospital, the Northern Hospital for Women and Children, Henshaw's Blind Asylum, the Deaf and Dumb Institution, the Royal Schools for the Deaf and Dumb, Ancoats Hospital and Ardwick and Ancoats Dispensary, and the Hospital for Consumption, Hardman-street, Manchester.

LONDON (R.F.H.) SCHOOL OF MEDICINE FOR WOMEN.—The following scholarships have been awarded for the session 1923–1924: Fishmongers' Exhibition for Girls (£50 a year for 3 years): Miss Winifred Harris (L.S.M.W.). Bostock Scholarship (£90 for 4 years): Miss Alice Hodge (L.S.M.W.). St. Dunstan's Medical Exhibition (£60 for 3 or 5 years): Miss Joyce Woods (City of London Girls' School). Mrs. George M. Smith Scholarship (£50 a year for 5 years): Miss Kathleen Gambrell (Streatham Secondary School). Dr. Margaret Todd Scholarship (£37 10s. for 4 years); Miss Dorothy Wilkins, B.Sc. (Bedford College for Women). Mabel Sharman Crawford Scholarship (£20 for 4 years): Miss Marguerite Fenn (L.S.M.W.). Sarah Holborn Scholarship (£20 for 5 years): Miss Ivy Varley (Newland High School, Hull). Isabel Thorne Scholarship (£30): Miss Decima Tracey (Hamilton House, Tunbridge Wells). Dr. Elith Poohey Phipson Post-Graduate Scholarship (£100 a year for 1, 2, or 3 years): Dr. G. M. R. Webster.

PUBLIC HEALTH LEGISLATION IN THE IRISH FREE STATE.—On August 1st a deputation from the Irish Medical Committee waited on the Minister of Local Government (Mr. E. Blythe) to make certain representations to the Minister with regard to the Public Health Bill which, it is announced, will be brought forward in the Dail at an early date. The deputation urged the acceptance of the entire programme of the Irish Public Health Council, including the establishment of a Ministry of Health and of a National Medical Service, and discussed questions relating to the Poor-law Medical Service (inadequate salaries, arrangements for holidays, and fees for occasional services).

MEDICAL CHARITABLE SOCIETY FOR THE WEST RIDING OF YORKSHIRE.—This society, founded in 1828, is one of the most flourishing of the societies connected with the medical profession. The annual subscription is one guinea, and those eligible for membership are medical men who at the period of their becoming members have not passed the age of 40, and have not been in practice in the West Riding more than 15 years without subscribing. From time to time the society has given in grants a sum amounting very nearly to £80,000; its investments have a nominal value of £43,374. The year from July 1st, 1922, to June 30th, 1923, began with a membership of 879. This number fell during the year to 853 in consequence of deaths and resignations, but was brought up to 897 by the election of new members, and the society now has a larger membership than ever before. Since the year 1911 the society has been administered under a trust deed. The work done by Dr. J. E. Eddison, who of late years has devoted much of his leisure to the work of the charity, is gratefully borne in mind by those connected with the society. No payment whatever is made to anyone connected with the work of the society, except to the professional auditors. Every request for assistance is closely scrutinised and sympathetically dealt with, and it is confidently claimed that no deserving case is ever passed over.

Appointments.

MARCUS, MAURICE, M.B., B.S. Lond., M.R.C.S., has been appointed Hon. Anæsthetist London Jewish Hospital.

SANDILAND, E. L., M.B., B.S. Lond., D.P.H., M.R.C.S., L.R.C.P. Lond., Medical Superintendent of East Lancs Tuberculosis Colony, Cheshire.

SCHUSTER, NORAH, M.B., Ch.B., Pathologist to the Infants Hospital, Vincent-square, Westminster.

Manchester Royal Infirmary: STAFFORD, H., M.B., Ch.B. Manch., Assistant Director of the Clinical Laboratory; SMITH, ELEANOR P., M.B., Ch.B. Manch., Assistant Resident Medical Officer Central Branch.

St. Thomas's Hospital: DYSON, A. D., M.R.C.S., L.R.C.P. Lond.; MURRELL, E. B., M.R.C.S., L.R.C.P. Lond.; COOPER, G. K., M.B., B.Ch. Camb.; PALMER, H. M., M.R.C.S., L.R.C.P. Lond.; LAUTRE, M. A., M.R.C.S., L.R.C.P. Lond; LUPTON, C. A., M.R.C.S., L.R.C.P. Lond.; BRIGGS, T. F., M.R.C.S., L.R.C.P. Lond.; WILLIAMS, L. G., M.R.C.S., L.R.C.P. Lond., Casualty Officers and Resident Anæsthetists. STORY, A. G., M.R.C.S., L.R.C.P. Lond.; COLE, L. B., M.B., B.Ch. Camb.; GIBSON, C. P. R., M.R.C.S., L.R.C.P. Lond.; FULLER, C. B. S., M.B., B.Ch. Camb., Resident House Physicians. LUND, G. S., M.R.C.S., L.R.C.P. Lond., Resident House Physician for Children. SUDBURY, F. B., M.R.C.S., L.R.C.P. Lond.; DAVIES, D. A., M.R.C.S., L.R.C.P. Lond.; HUGHES, K. E. A., M.R.C.S., L.R.C.P. Lond.; CROCKFORD, A. L., M.B., B.Ch. Camb., Resident House Surgeons. WILKINSON, M. C., M.R.C.S., L.R.C.P. Lond., Resident Orthopædic House Surgeon. KIES, J. P., M.R.C.S., L.R.C.P. Lond.; WALFORD, A. S. H., M.B., B.Ch. Camb., Resident House Surgeons for Ear, Nose, and Throat. BERRIDGE, W. C. M., M.R.C.S., L.R.C.P. Lond., Senior Obstetric House Physician; MORRISON, R. G., M.R.C.S., L.R.C.P. Lond., Junior Obstetric House Physician. DOGGART, J. H., M.R.C.S., L.R.C.P. Lond., Senior Ophthalmic House Surgeon; NICORY, C., M.R.C.S., L.R.C.P. Lond., Junior Ophthalmic House Surgeon. A. F. POTTER, M.R.C.S., L.R.C.P. Lond., R.M.O. St. Thomas's Home. HILL, H. G., M.B. Camb., Senior Medical Casualty Officer. PATRICK, C. V., M.R.C.S., L.R.C.P. Lond., Senior Surgical Casualty Officer. CARDELL, J. D. M., M.B., B.S. Lond., Senior Resident Anæsthetist. CAVENAGH, J. B., M.B., B.Ch. Oxf.; NEILSON, D. F. A., F.R.C.S. Eng.; JONES, B. H., M.R.C.S., L.R.C.P. Lond.; FACEY, R. V., M.R.C.S., L.R.C.P. Lond.; LOCKHART, L. P., M.R.C.S., L.R.C.P. Lond.; MAIRHNER, H. I., F.R.C.S. Edin.; HICKS, E. W., L.M.S.S.A.; PENMAN, G. G., M.R.C.S., L.R.C.P. Lond.; FRANKLIN, C. A. H., M.R.C.S., L.R.C.P. Lond.; CREED, R. S., M.R.C.S., L.R.C.P. Lond.; CURWEN, E. C., M.R.C.S., L.R.C.P. Lond.; STEVENS, A. L. B., M.B., Ch.B. Oxf.; MOWLE, A. C., M.R.C.S., L.R.C.P. Lond.; WALKER, E. G. L., M.R.C.S., L.R.C.P. Lond.; ALLAN, F. G., M.R.C.S., L.R.C.P. Lond.; JARRATT, W. O. C., M.R.C.S., L.R.C.P. Lond.; ALDEN, J. W., M.R.C.S., L.R.C.P. Lond.; A. L. P. JEFFERY, M.R.C.S., L.R.C.P. Lond., Clinical Assistants.

Vacancies.

For further information refer to the advertisement columns.

Bath, Royal Mineral Water Hospital.—Res. M.O. £200.
Belgrave Hospital for Children, 1, Clapham-road, S.W.—H.P. and H.S. Each £100.
Birkenhead Borough Hospital.—Hon. Skin Specialist.
Birmingham, City Hospital, Little Bromwich.—Senior Asst. M.O. £350.
Birmingham General Dispensary.—Res. M.O. £450.
Birmingham, West Heath Sanatorium, &c.—Med. Supt. £650.
Blackburn County Borough.—Asst. M.O.H. £736.
Bristol, Cossham Memorial Hospital, Kingswood.—H.S. £120.
Cape Town University.—Wernher Beit Professor of Bacteriology.
Carlisle, Cumberland Infirmary.—Res. M.O. £175.
Central London Throat, Nose, and Ear Hospital, Gray's Inn-road, W.C.—Res. H.S. £75.
Chester City and County.—Asst. M.O.H. £500.
Croydon County Borough.—Deputy M.O.H. and School M.O. £780.
East African Medical Service.—M.O. £600.
Exminster, Devon Mental Hospital.—Third Asst. M.O. £300.
Federated Malay States, Central Mental Hospital.—Asst. Med. Supt. £616.
Hull Tuberculosis Sanatorium, Cottingham.—Res. Tub. O. £350.
Leeds University, Dept. of Physiology.—Prof. of Phys. Also Lecturer in Phys. £800 and £600 respectively.
Lenham Sanatorium.—Med. Supt. £650.
Liverpool, Royal Southern Hospital.—Two H.P.'s. and Three H.S.'s. Each £100. Also Res. Cas. O. £150.
London Temperance Hospital, Hampstead-road, N.W.—H.P. £120.
Manchester, Barnes Convalescent Hospital, Cheadle.—Res. M.O. £250.
Manchester, St. Mary's Hospitals for Women and Children.—Two H.S.'s. Each £50.
Rotherham Hospital.—Sen. H.S. £260.
Royal Naval Medical Service.—Surgeon Lieutenants.
Staffordshire Education Committee.—Two Asst. School Med. Inspectors. £600.
Sutton, Surrey, Downs Hospital for Children.—Asst. M.O. £515.
Warwickshire, King Edward VII. Memorial Sanatorium, Hertford Hill, near Warwick.—Asst. Res. M.O. £350.
West African Medical Service.—M.O. £660.
West Riding County Council.—School Med. Inspector. £500.

The Secretary of State for the Home Department gives notice of vacancies for Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit Nos. 6, and 42 and 50 (St. Helens, &c., County Courts). Applications should reach the Private Secretary, Home Office, not later than August 25th.

Births, Marriages, and Deaths.

BIRTHS.

LIVINGSTON.—On August 2nd, at Wigmore-street, the wife of Flight-Lieut. P. C. Livingston, R.A.F. Medical Service, of a son (Clermont).

MARSHALL.—On August 3rd, at the Manor House, Goudhurst, Kent, the wife of R. Prynne Marshall, M.R.C.S., L.R.C.P., of a son.

PARKINSON.—On August 3rd, at 1, Devonshire-place, W. 1, the wife of John Parkinson, M.D., F.R.C.P., of a daughter.

MARRIAGES.

MARKLOVE—DAVIES.—On August 2nd, at the Parish Church, Stroud, John Carrington Marklove, M.R.C.S., L.R.C.P., to Muriel Alice Mary Davies, M.R.C.S., L.R.C.P., elder daughter of Mr. and Mrs. A. Barnes Davies, of The Old Vicarage, Stroud.

UNDERHILL—WORNUM.—On August 2nd, at All Souls' Church, Hampstead, Sydney William Frank Underhill, M.A., B.M., B.Ch., to Edith Betty, youngest daughter of the late G. Porter Wornum, Esq., L.R.C.P., M.R.C.S., and Mrs. Wornum, of Belsize-park, Hampstead.

DEATHS.

SMITH.—On August 5th, at 12, Clarence-road, Gorleston-on-Sea, Oliver Smith, M.B., Ch.B. Edin., aged 41 years.

STEWART.—On July 30th, suddenly, at his residence, Devonshire-road, Birkenhead, Andrew Stewart, L.R.C.P., L.R.C.S., in his 69th year.

WILKINSON.—On July 28th, at Portland-place, Leamington Spa, suddenly, Lancelot Craven Wilkinson, M.R.C.S., L.R.C.P., F.R.G.S., aged 43 years.

WILLIAMS.—On August 1st, at the County Hospital, Huntingdon, Frederick Edgar Williams, M.R.C.S., L.R.C.P., B.A. Camb., in his 61st year.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

THE LANCET: SUBSCRIPTION RATES.

INLAND	One Year	£2	2	0
	Six Months	1	1	0
	Three Months	0	10	6
ABROAD	One Year	2	10	0
	Six Months	1	5	0
	Three Months	0	12	6

Notes, Comments, and Abstracts.

SCHOLARSHIP IN MEDICINE.

BY SIR HENRY MORRIS, BART., M.A., M.B. LOND.

IN a letter to the *Times* on June 11th last, Mr. Gillbard alluded to the scientific, technical, and materialistic trend of medical education in the present day, and said that on that account a liberal and classical preliminary education for medical students is more than ever necessary. He told how Harvey, when in attendance on Charles the First at Edgehill, was found behind a hedge in the danger zone reading Virgil; and he grouped together Harvey, Sydenham, and Hunter as typical believers in the humanities. Two days later, Mr. George C. Peachey, in a letter also in the *Times*, (June 13th), took exception to the inclusion with Harvey of both Sydenham and "John" Hunter, as examples of the effect of classical education upon the progress of medical science—a selection which, he thinks, singularly unhappy.

In regard to Sydenham, who published a number of his works in the Latin language, there has been a considerable amount of discussion as to whether he wrote them originally in Latin or in English and got them translated into Latin. In regard to Hunter, Mr. Gillbard, in mentioning him, did not say "John" Hunter, who, it is true, had no classical education at all, and little general education of any kind. The Hunter to whom Mr. Gillbard referred, was, no doubt, John Hunter's brother, Dr. William Hunter, a man of great culture and learning, whose fine library of Greek and Latin classics, and whose extensive collections of natural history and other specimens passed to, and are now the property of, the University of Glasgow.

Francis Adams, M.R.C.S. Eng.

But the chief interest of Mr. Peachey's letter lies in his revival of the memory of a certain country surgeon, who lived and died a general practitioner in a small village on Deeside, and whose name is now almost forgotten, though it is but 62 years since his death. The name is that of Dr. Francis Adams, M.R.C.S. Eng., M.A. Aberdeen, and LL.D. Glasgow, of Banchory-Ternan, the editor and translator of Hippocrates, Paulus Ægineta, and Aretæus. Mr. Peachey spoke of Dr. Adams as "probably the greatest classical scholar among British medical practitioners of all time," and quoted some anonymous person who, in 1857, described him as "the most learned physician in Britain and probably in Europe."

Beyond question Dr. Adams was a great scholar, who possessed a most accurate and extensive acquaintance with the language and literature of Greece, and he ought to be remembered with special pride, and for all time, by those who practise medicine, as one whose classical attainments and competent knowledge of the French and German languages caused him to stand out prominently during life as a scholar, and enabled him to leave behind him writings which should make his name for ever famous. His translation of the "genuine" Hippocratic treatises is the only complete one in the English language; the same is true of his translation of the seven books of Paulus Ægineta, and of the treatise of diseases by Aretæus, the Cappadocian, one of the most celebrated of the ancient Greek physicians, and who is noticeable because of his dissension from the teaching of Hippocrates when he thought it imperfect or incorrect. By these translations, Adams did as great a service to those members of the medical profession who are not great Greek scholars, as Jacques Amyot (1513–93) did for the general run of French readers by his numerous translations of Greek literature and, especially, by his translation of Plutarch's "Lives" from the Greek into French; and as an English translation of the "Lives" was afterwards made from the French edition, Amyot's dissemination of Greek literature had its effect upon English prose, as well as upon French.

Adams should have a Memorial in the Royal College of Surgeons.

But Adams's claim to distinction is not merely that of a translator of concise and often obscurely expressed Greek treatises, such as those of Hippocrates, but because of the care with which he examined for himself the passages in ancient authors bearing on points open to discussion, and of his erudite "*preliminary discourse*" on the Hippocratic treatises, and the innumerable annotations and references throughout that work. He is said to have made himself acquainted with every extant Greek writing, not Greek medical writings only; and there is ample proof throughout this translation of Hippocrates, of his wide knowledge of Oriental, English, and European commentators and historians who have discussed the works of Hippocrates.

The period at which Hippocrates was practising his profession was "one of the most memorable epochs in the intellectual development of the human race," and Adams shows a familiarity also with the lives of all the great statesmen, artists, and scholars of that time. Indeed, Adams's erudition was so remarkable, and was developed so largely amidst the interruptions and distractions of medical practice, that there ought to be a bust or some other form of memorial of him in the Royal College of Surgeons of England, to mark the honour he is to his College, and to record the extraordinary degree of literary culture to which he attained whilst discharging to the full the duties of a general medical practitioner.

But notwithstanding the truth of the above appreciation of Adams's erudition, some consideration of others ought to be shown before accepting off hand the title accorded to Adams by the *Medical Times and Gazette* (1861) of "Doctissimus Britannorum," and more especially before we claim for him the position of the most learned physician in Europe.

Linacre and Rabelais.

In this connexion something requires to be said about Linacre for England, and Rabelais for France. Linacre (1460–1524) lived at a critical period in the history of learning, when the world was entering on a crisis, passing from the mediævalism of the schoolmen to the wider culture of the "New Learning." Rabelais (1495–1535) came somewhat later, but was one of the most notable writers and thinkers of the early days of the French Renaissance. Linacre had received an incentive to the study of Greek at the Cathedral School at Canterbury, and, after election to a Fellowship at All Souls' College, Oxford, he, with Colet (1467–1519) and a few other Oxford scholars visited Italy, in 1493, and there became imbued with the learning and spirit of the Italian Renaissance. England was a long way behind France and still further behind Italy in exorcising the old conditions of mediævalism and introducing the humanities of the Renaissance; but in Paris, on their way back to Oxford, Linacre and Colet came into touch with the two men who were supreme in their influence upon European scholarship in the latter part of the fifteenth century and the first half of the sixteenth century. These two men were Guillaume Budé (Budæus) and Erasmus, who were exact contemporaries of one another, having been born in 1466–67.

France had now gone ahead of Italy and become the centre of European Greek culture and literature; and foremost in France was Budæus, a Frenchman and a teacher of Greek in the University of Paris, who became the most famous man in Europe as an author on Greek philology, Roman law, and on education generally. Erasmus, the Dutchman, whose scholarly genius was developed in France, was the only rival of Budæus, but was not his equal in Greek, though superior to him in style in the writing of Latin. Linacre and Colet formed ties of close friendship with these two men, upon whom in turn they exercised a marked influence; and on their own part, by their eager study of Greek, they not only illuminated the darkness which prevailed in England in the period preceding the English Renaissance, and took the lead in the revival of classical literature and the humanistic movement in England in the Tudor period, but made some impression on contemporary European culture, in which Linacre and Sir Thomas More, especially, played distinguished parts.

Budé's influence on Colet was great and, under the zeal for educational reform which he had imbibed from him, Colet founded, or re-founded and enlarged St. Paul's School in London for the study of Greek, as well as Latin.

Linacre also had a great regard for Budé and, in a letter still extant, paid him a very high tribute of admiration. Erasmus, it is said, was one of Linacre's pupils in Greek, others being Sir Thomas More, Prince Arthur, and Queen Mary. Linacre closely studied the investigations of Aristotle and other Greek inquirers in natural science; he finally concentrated his attention on the study of Greek medicine, and by translating the Greek works of Galen into Latin he acquired Continental fame and spread widely the knowledge of Greek medical literature. At home he founded the Royal College of Physicians of London, and thereby did much directly to organise the medical profession in England. Linacre, like William Lily, the first Master of St. Paul's School which Colet had re-founded, wrote a Latin Grammar which obtained a great reputation abroad, and was very popular both with teachers and pupils on the Continent, as well as at home.

No other classical scholar in British medicine has ever exercised so deep and wide an influence on classical literature and humanistic culture, outside his own country, as did Linacre. In spite of the efforts of Linacre and Colet, however, Renaissance teaching was not to any great degree accepted by the English. This was shown by the coldness and indifference which More's "Utopia" met with in England and the welcome given to its appearance on the Continent.

Sir Thomas More's "Utopia."

Sir Thomas More (1478–1535), the author of the great political and social essay "Utopia," was 18 years younger than Linacre, and 11 or 12 years younger than Colet, Budæus, and Erasmus. When at Oxford, young More had Colet and Linacre for his tutors, and subsequently enjoyed the friendship and warm attachment of both Budé and Erasmus. But though it was through his circle of friends at Oxford that More was first smitten with the spirit of the "New Learning," it was his acquaintance with Erasmus—which began in 1498 or 1499—which caused him to return later with ardour to the study of Greek and the earnest pursuit of humanism. He published translations from the Greek and excelled beyond the average English scholars in writing Latin. His "Utopia," which was written in Latin and published in 1516, first at Louvain and then in Paris, was a contribution to European rather than to English literature. Through the kindly influence of Budé and Erasmus, "Utopia" took a prominent place in France, and edition after edition in the original Latin was issued from the Continental press. It was not translated into English until 35 years (1551) after it was first published in Latin, and a French translation appeared some time before it was rendered into its author's native language.

More's Influence on Rabelais.

A very notable feature of More's "Utopia" was the deep interest it aroused in Rabelais and the familiarity with its contents which is shown by Rabelais in his celebrated work, "Gargantua and his giant son, Pantagruel." Rabelais was greatly indebted to More. It would not be in place here to describe the similarity between Rabelais's story and More's political and social romance; but it is worthy of mention when passing on to consider Rabelais's reputation as a physician. I have on a previous occasion, in the columns of THE LANCET (1910, vol. i., p. 1155), written of this side of Rabelais's life, and if I again allude to it now, it is to speak of his scholarship in relation to his comparative eminence in medicine. Until the end of the fifteenth century, Greek was not known in France, but in 1495, the year of Rabelais's birth, a small coterie of scholars, including two physicians, was formed in Paris for the express study of Greek. Rabelais had previously studied Greek under difficulties, but when 25 years of age he got into communication with several members of this coterie, and with Erasmus, the leading scholar in Europe. One consequence of his acquiring Greek was that when lecturing in Montpellier, Rabelais was able to base his lectures on the Greek original of Galen, and on his own copy of the ancient manuscript of Hippocrates, instead of upon the mutilated and imperfect Latin translations used by former professors.

Rabelais had been a medical student in Paris and took his degrees in medicine in Montpellier in 1530 and 1537. He gave anatomical demonstrations on the human body both in Montpellier and Lyons, he invented certain surgical instruments, and with the sanction of the Holy Father, he was allowed to practise the art of Medicine for Charity, not for gain, and without using either the cautery or the knife. He was described by a contemporary as the "honour and sure glory of the healing art," and a Latin ode was written about him, in which it was said that by his skill he was esteemed the most eminent physician in France. But the renown of both Linacre and Rabelais, though eminent as practitioners of medicine, rests especially upon the distinction they acquired in general culture and classical literature, and upon their influence in promoting the "New Learning" throughout the civilised world.

FEMININE PSYCHOLOGY.

A WORK demanding that woman, unfitted for anything else by her manifold vices and imperfections, must have her powers curtailed and be restricted to the exercise of her reproductive functions, is something of an anachronism. That her vices result from a biological need is Mr. Ludovici's[1] vindication of her, and the vices are fully and feelingly described. The author writes in the style of the author of "Lovely Woman," but, unlike Mr. Crosland, takes himself seriously; so seriously, indeed, that he regresses to that primitive phantasy which psychologists call "the omnipotence of thought." What he thinks ought to be, is. Fertilisation is a natural process in woman; its absence leads to physiological disappointment, which "sings in chorus with the psychical disillusionment"; then she seeks a co-respondent; hence follows the frequency of divorce. The author thinks this ought to happen, so it happens. The control of conception ought to be harmful, so in the man "ultimate anæsthesia is inevitable." The thesis requires that woman should be unfit for sports; unfit she is, especially during her "moments of indisposition," and her violent sports, by a round-about pathology, lead to "very obscure but severe

[1] Woman: A Vindication. By Anthony M. Ludovici. London: Constable. 1923. Pp. 378. 12s.

nervous disorders in later life." Perhaps the account of this last para-physical process only indicates an unquestioning belief in grandmotherly doctrine, and one comes to think that the author's attitude is a defence against the feminine in his own make-up, especially when he tells us (p. 352) that "it is enormously difficult for a woman to divorce her wishes, her likes and dislikes, from her beliefs and from her conclusions."

After a talk on the national downfall that is about to follow the growth of feminism, the author says, "We cannot now with any pretence of honesty or good faith claim that it is a plunge into the unknown." This tribute to the physical reality of the phantasy concludes a book that is not so startling as the picture on the wrapper would indicate.

"THE FIGHT AGAINST DISEASE."

THE July issue of this little journal, published by the Research Defence Society at the price of 6*d.*, and sold by Macmillan and Co., Ltd. (St. Martin's-street, London, W.C. 2.), contains the accounts and the Committee's annual report, signed by Lord Knutsford as chairman, together with pithy notes on the world's health, and illustrated articles regarding small-pox at Gloucester and in the United States (with a letter from Prof. Keen of Philadelphia), and tuberculosis treated by heliotherapy in Switzerland. Its pages are few but piquant.

POPULAR ENDOCRINOLOGY.

IN a scholarly little book on "Ductless and Other Glands," recently published (George Allen and Unwin. 4*s.* 6*d.*) Dr. Fred. E. Wynne, the versatile medical officer of health for Sheffield, gives a popular description of the results of recent endocrine research and the application of this knowledge to the prevention and cure of disease. Thyroid, parathyroid, thymus, suprarenal, pituitary and pineal are taken in succession and their secrets laid bare. Finally, Dr. Wynne deals with the ability of extracts of glands to renew the youth of man. In spite of the work of Voronoff on monkey glands, he warns the reader only to accept such conclusions on overwhelming evidence. The cycle of growth, maturity, and decay is a law of nature that governs suns and solar systems, as well as the protoplasm that crawls and swings for a time on the surface of this little planet. Man's only demonstrable immortality is his power to beget and transmit his qualities to his offspring. Dr. Wynne concludes that if youth and maturity were rightly used, if social conditions were what they might be made, old age would be as physiological a period as any other, and probably no less pleasant, a tranquil preparation for a welcome cessation of consciousness.

PUBLIC HEALTH IN NIGERIA.

Mr. A. C. Burns, assistant secretary at Lagos, is responsible for the annual general report for 1922 on the Colony and Protectorate of Nigeria, situated on the northern shores of the Gulf of Guinea. According to this report the general health was good throughout the year, the gravest problem presented during the period being a recrudescence of cerebro-spinal fever in epidemic form. The outbreak declared itself in the north-eastern region of the Kontagora Province—i.e., immediately south of the eastern limit of the epidemic of the previous year. At first its aspect was gravely menacing, but all available precautions were taken, and, in the end, the advent of the rains found it happily still localised within the region of recrudescence, wherein it finally subsided. In the autumn the Emir of Katsina reported its existence in the French territory across his northern boundary, but the end of the year left Nigeria free from the visitation. A "health week" was organised in Lagos in November, and prizes were offered for the healthiest babies and the best-kept compounds. The people were much interested, and an immense quantity of accumulated refuse was disposed of during the week. The population of Nigeria is approximately about 18½ millions—larger than that of any British dependency except India. There are about 4000 Europeans temporarily resident in Nigeria, chiefly in the employ of the Government, and of mercantile and mining companies. The country is not suited for European settlement. Of the native inhabitants the greater number are of pure negro race, but in the north there are Berber and negroid tribes. The seasons in Nigeria depend rather on the rainfall than on temperature. They are, as a rule, well defined. The dry season, with its attendant "harmattan," commences in the north of the country in October and ends in April. It is of shorter duration in the south, and at Lagos generally lasts from November to March with only intermittent "harmattan." During the "harmattan" (a dry north-easterly wind which brings with it a thick haze composed of minute particles of dust and shell) the nights and early mornings are cold, but the days are very hot, and it is during this period that the maximum diurnal variations occur. Under the heading "General Observations," in Mr. Burns's report, we find the following: "One of the principal religious obstacles to the advance of Christianity in tropical Africa is the prevalence and popularity of polygamy. Among the followers of Islam this institution has, of course, the sanction of religion. Among the non-Muslim tribes it has the equally strong sanction of immemorial custom. In West Africa children are assets rather than liabilities, the daughters being easily marketable as wives at an early age and the sons providing an unpaid labour supply; wives, besides their value as mothers, perform most of the manual labour in the house and on the family farms, but the custom which requires a mother to deny herself to her husband for the period during which she is nursing her child, often from two to three years, is, perhaps, the greatest cause of polygamy. The Native African Church, modelled in other respects on the Church of England, but allowing to its members a plurality of wives, has met the difficulty of those who wished to adopt the Christian Creed without abandoning one of the most cherished of their ancestral customs."

THE PEKING UNION MEDICAL COLLEGE.

THE Peking Medical College grew out of a small dispensary, originally founded at Peking by William Lockhart, of the London Missionary Society, in 1861. The work slowly progressed until the time of the Boxer rising, when all the buildings and plant were destroyed. After the rising, work was begun again in 1906, and various other missionary societies, both British and American, joined together to found the Union Medical College. This College continued to grow until 1914, when the Rockefeller Foundation despatched its Commission to China to study the question of medical education there. As a result the China Medical Board purchased the entire plant and arranged for the complete reorganisation of the school under charter from the University of the State of New York. A volume[1] recently published describes the ceremonies and the conference held in September, 1921, being some 60 years since the foundation of the first medical mission in Peking in 1861.

The College is equipped with the very latest apparatus and plant necessary, not only for the treatment of patients, but also for medical education and research. It is apparently doing admirable work, and, as medicine seems to be the one subject upon which men of all creeds and nationalities can agree, its activities should go far towards bringing about that union between nations in which the hope of the world lies to-day.

[1] Addresses and Papers: Dedication Ceremonies and Medical Conference: Peking Union Medical College, Sept. 15th–22nd, 1921. Peking, China. 1922. Pp. 416.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY, August 13th.—10 A.M., Mr. Maingot: Surgical Pathology. 12 noon, Mr. Simmonds: Applied Anatomy. 3 P.M., Mr. Simson: Diseases of Women.

TUESDAY.—10.30 A.M., Dr. Paterson: Medical Wards. 12 noon, Dr. Burrell: Chest Cases. 2.30 P.M., Mr. Tyrrell Gray: Surgical Wards.

WEDNESDAY.—12 noon, Mr. Sinclair: Surgical Dyspepsia. 2 P.M., Mr. Gibb: Eye Dept. 3 P.M., Dr. Pernet: Skin Dept.

THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Dept. 12 noon, Mr. Simmonds: Demonstration of Fractures. 3 P.M., Dr. Scott Pinchin: Medical Out-patients.

FRIDAY.—10 A.M., Mr. Dudley Buxton: Dental Dept. 2 P.M., Dr. Burrell: Medical Out-patients. 2 P.M., Mr. Sinclair: Surgical Out-patients.

SATURDAY.—10 A.M., Medical Registrar: Diseases of Children.

Daily, 10 A.M. to 6 P.M. Saturdays, 10 A.M. to 1 P.M. In-patients, Out-patients, Operations, Special Departments.

INDEX TO "THE LANCET," VOL. I., 1923.

THE Index and Title-page to Vol. I., 1923, which was completed with the issue of June 30th, is now ready. A copy will be sent gratis to subscribers on receipt of a post-card addressed to the Manager of THE LANCET, 1, Bedford-street, Strand, W.C. 2.